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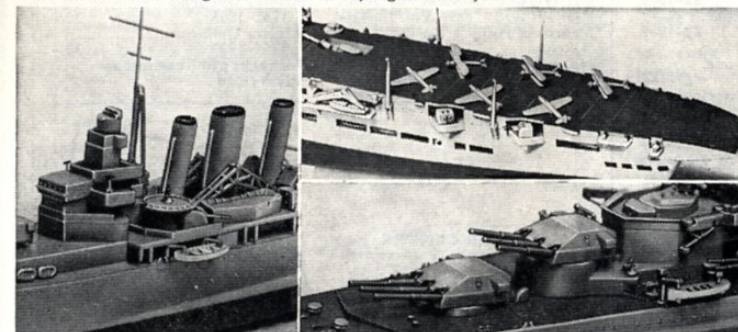


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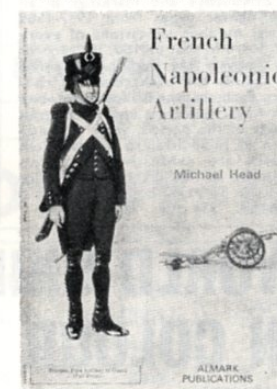
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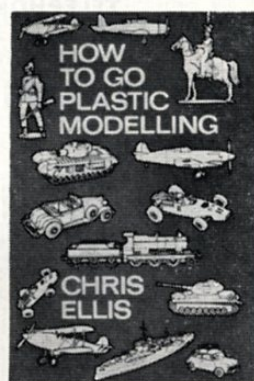
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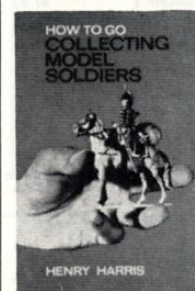


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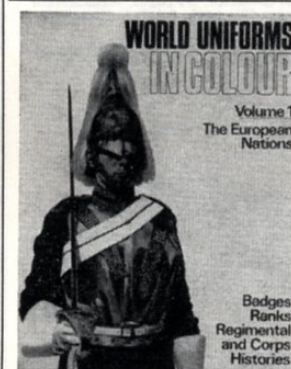
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AIRFIX magazine

AIRFIX magazine FOR PLASTIC MODELLERS

January 1971

Volume 12 No 5

Editor Chris Ellis

Cover Picture:

A North American F-100D of 727 Sqn Royal Danish Air Force, seen taxiing past Hawker Hunter GA11s of 764 Sqn FAA at RNAS Lossiemouth in Scotland. This Super Sabre was one of four which visited the RN Fighter Training Squadron in July 1970. Lossiemouth lies between bleak mountains and the Moray Firth and enjoys a unique climate known as the 'Lossie Hole'. Local weather conditions allow year-round flying operations and this combined with the low population density of the area, nearby bombing ranges, and RN controlled airspace offers a great deal to NATO air squadrons which regularly visit the base. Two of the F-100s were finished in the new Danish scheme of overall dark green with mini-markings though this machine in the old scheme is a more photogenic subject. All the aircraft were marked with 'Fly Navy' in Danish—FLYVE MARINE. The Station's LM code was painted under the port side of the canopy. (Picture by Richard E. Gardner)

Next publication date:
January 22, 1971

Editorial Offices:

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MEMBER OF THE AUDIT
BUREAU OF CIRCULATIONS

NEWS FROM AIRFIX

The world's greatest value in construction kits

- Blohm und Voss Bv 141B
- 'High Chaparral' figures
- Leopard tank
- Vostok, Sputnik, Soyuz
- Gloster Meteor III
- 1:24 scale Spitfire Ia

THE unusual design of the Blohm und Voss Bv 141B was intended to afford all-round visibility to the aircraft's crew of three. Primarily used as a reconnaissance aircraft in the second world war, the Blohm und Voss was ordered in limited prototype quantities by the Luftwaffe but it never realised the full-scale production for which it was originally intended.

The 60 part Airfix model in 1:72 scale has a wing span of 9½ ins and the overall length is 7½ ins. The starboard wing-mounted, nacelle holds three crewmen, provided in the kit, and is detailed internally. Actual armament included a further four 7.9 mm machine guns, all depicted in the kit. The rear canopy of the nacelle can be modelled open or closed depending on whether the rear machine gun is to be operational. Price of the Bv 141B kit is 6s.

ONE of West Germany's major contributions to the defence of the Western bloc is the 40 ton Leopard Tank. Belgium, Holland and Norway have ordered the Leopard for use by their



armed services and it is standard equipment in the West German army.

The accurately detailed 78 part Airfix kit in 1:76 scale is 3½ ins long and 1½ ins wide. The turret rotates through a full



The distinctive lines of the Blohm und Voss Bv 141B portrayed well in the new Airfix model. Other new Airfix aircraft kit releases include the Meteor III, the Bristol Bulldog, and the Henschel Hs 123 which we will be describing in the next issue.

circle and the British-built 105 millimetre gun, as used on the Centurion, can be elevated to various firing positions. On the turret the split-view range finder, eight smoke grenade dischargers, two hatches and 7.62 mm anti-aircraft machine gun are all accurately moulded. External detail like air cooler louvres, shovel and pick axes, plus number plates, lights, driver's hatch, mirrors and countless other items of ancillary hull equipment are all depicted. Flexible tracks surround free-running bogie wheels and the intricate suspension is faithfully reproduced. Price of the kit, complete with German transfers, is 4s 3d.

THE Wild West comes to life in an exciting set of 42 'High Chaparral' cowboys and outlaws. Instantly recognisable characters, such as John and Victoria Cannon, Manolito, Boy Blue and Buck Cannon from the popular BBC-TV series are accurately portrayed. There are men on horseback, some running,



some falling, others in characteristic stance with six-shooters or rifles at the ready. All the atmosphere of the now familiar confrontation between heroes and villains can be authentically recreated with this new set of OO/HO figures. Price is 2s 11d.

AT a celebration dinner on September 26 in Stockholm, Mr Gunnar Kihlman, General Manager of The National Association of Swedish Toy Dealers, presented Mr Ralph Ehrmann, Chairman of Airfix Industries Limited, with the 'Brunte', Sweden's Toy of the Year award. The coveted trophy was won by Airfix in competition with the world's leading toy manufacturers. This is only the third occasion on which the award has been given to a British company.

Presenting the 'Brunte', a wooden horse in characteristic Swedish design and colours, Mr Kihlman said that members of the Association had unanimously chosen Airfix construction kits because of the authenticity, accuracy and high quality of the

AIRFIX magazine

complete range. The fact that the scale model construction kits were of interest and educational value to such a wide age group was particularly commended and the company was complimented on the design and quality of its packaging.

Mr Ehrmann flew to Sweden especially to receive the award and it now has pride of place in Airfix Products' Board Room.

THE Russians have launched all their spacecraft on a Vostok two-stage central core vehicle with four booster rockets attached to the first stage. The USSR were first into space with Sputnik I in 1957 and their programme has seen the three Sputnik launches followed by Vostok I carrying the first man to orbit the earth and several other Vostok and Voskhod flights in addition to the latest series of Soyuz missions. The 103 part Airfix kit in 1:144 scale offers modellers accurate examples of the launcher rocket and Sputnik, Vostok and Soyuz spacecraft all of which are interchangeable with the launcher. The central core carrier rocket and the four boosters which between them carry twenty primary rockets and twelve verniers producing a total of 1,200,000 lbs thrust at lift-off are skilfully moulded and the smooth lines of the model are accentuated by the stabilising fins at the base of each booster. Airfix designers have reproduced all the intricate detail of the twenty primary engines and the second stage.

The Sputnik model stands 1½ inches high and carries the CCCP markings. Sputnik I was the first man-made satellite to orbit the earth, Sputnik II carried Laika, the first space dog and Sputnik III on which the Airfix model was based was a cone-shaped laboratory which included a ton of scientific instruments and communications equipment.

Next comes a finely-moulded model of Vostok I which includes a cosmonaut's capsule, communications antennae, steering engines and a detachable, pointed rocket nose fairing with cosmonaut's observation port.

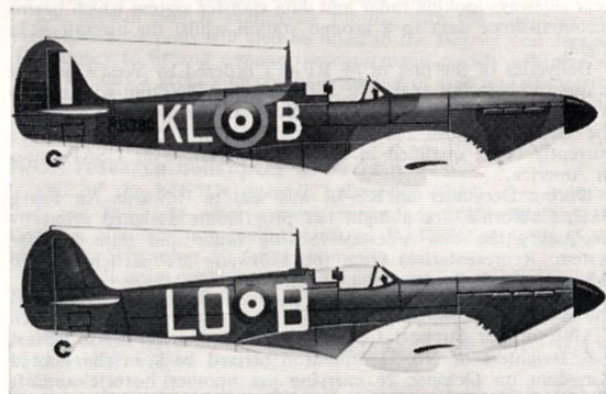
The model of the Russian Soyuz spacecraft stands 5 inches high and includes accurately shaped launch escape tower, cosmonaut's capsule and steering motors. The interior of the spacecraft comprises a spherical laboratory and rest compartment in the nose of the re-entry capsule which adjoins an equipment section. Modellers can separate the re-entry capsule from the laboratory and equipment section. The three spacecraft, Sputnik, Vostok and Soyuz can be placed on top of the standard launcher rocket which is the same scale as the Airfix Apollo Saturn 5 and makes an interesting comparison in size. The kit costs 11s 6d.

THE Airfix model of the Gloster Meteor III is in 1:72 scale and when completed has an overall length of 7½ inches and a 7 inch wing-span. The Meteor was the first British jet to go into action in World War 2 where it was used mainly for ground attack missions. The aircraft was powered by two Rolls-Royce Derwent jets providing a maximum speed of 490 mph and armament consisted of four 20 mm cannons. On the model the undercarriage and nose wheel can be cemented in the down or retracted position and detail of the airbrakes is included on top and underneath the wings. The jet intakes and exhaust, landing light, airframe detail and communications antennae have been meticulously reproduced. A full set of authentic RAF transfers, detailed painting instructions and a presentation stand carrying the name of the aircraft are included in the kit. Kit price is 4s 3d.

Below: The Airfix Meteor III gives enthusiasts the long span wings and 1945 vintage markings of the first British operational jet aircraft.

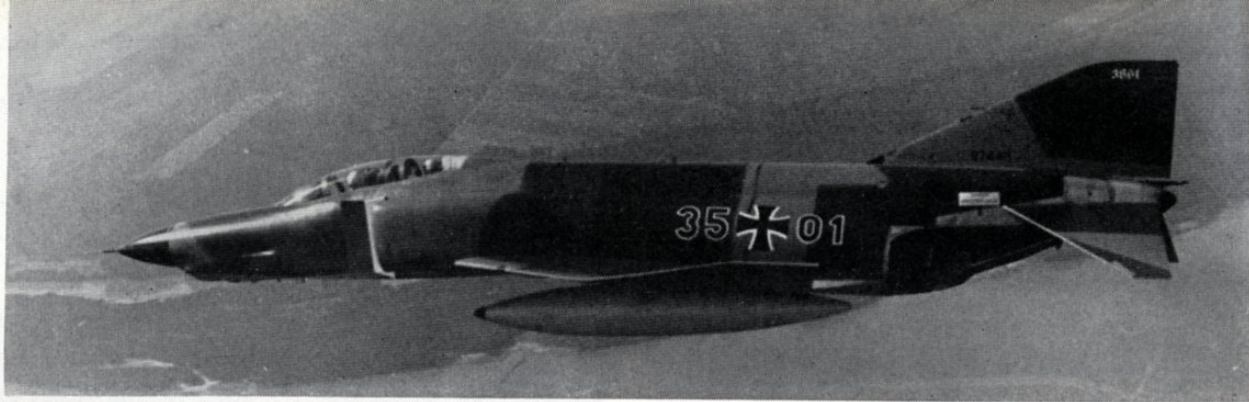


Above: As a companion piece to the Saturn 5 rocket, Airfix now offer the Russian launcher rocket with alternative Sputnik, Vostok, and Soyuz spacecraft. Below: Sets of markings for two alternative aircraft are included in the giant 1:24 scale Spitfire kit. Multi-view colour art is included in the instruction booklet from which these black-and-white reproductions are given.

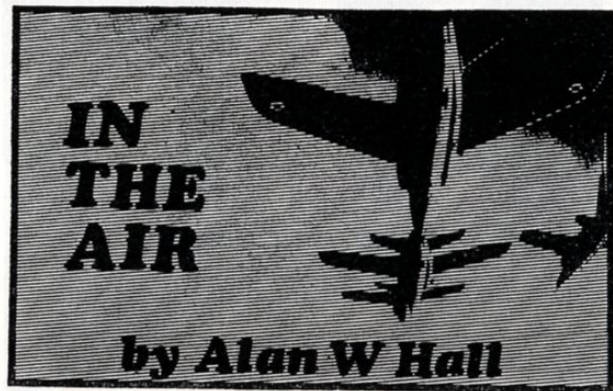


EVERY year at this time Airfix has, almost by tradition, produced a 'big bomber' in 1:72 scale which has been a highlight of the Christmas holiday period for many a keen modeller. Now that all the really popular 'big bombers' have been reproduced in kit form, Airfix have turned to a scale, 1:24, which is dramatically larger than anything previously offered, and look set fair to start a new cult, the collecting of 'jumbo' size models. First release to this new scale, priced at 35s, is a fine replica of the immortal Spitfire Mk 1a—the obvious choice—which takes advantage of its immense size to allow virtually every tiny detail of the original to be reproduced to the highest fidelity. The Airfix

Continued on page 271



The first of 88 RF-4E Phantoms for the West German Air Force serialised 87448 made its first flight on October 22. Externally similar to the USAF's RF-4C the latest Luftwaffe machine has more powerful engines and advanced sideways looking radar and a data transfer system which beams reconnaissance data to a ground station whilst the aircraft is in flight.



THE maiden flight of three RF-4E Phantoms for the Luftwaffe took place at St Louis, Missouri, on October 22. The aircraft are the latest models of the Phantom to be produced. It is similar to the USAF's reconnaissance RF-4C but has the more powerful General Electric J79-17 engine and an advanced Good-year sideways-looking radar and data transfer system which beams reconnaissance data to a ground station whilst the aircraft is in flight.

Deliveries of the first of 88 RF-4Es ordered by West Germany is due to begin this year. The West German Phantom will operate from bases at Bremgarten in Southern Germany and Leck near the German/Danish border. German pilots and navigators are currently being qualified in Phantom operations at USAF bases in America.

During December an RF-4E was sent to Edwards Air Force Base, California, for a flight test programme designed primarily to qualify the new sideways-looking radar and data transfer system. Representatives from the Luftwaffe are participating in the nine-month long series of tests.

Belfast brings back Swordfish

ONE of Air Support Command's Brize Norton-based Belfast freighters of No 53 Squadron arrived back in the United Kingdom on October 26 carrying yet another historic aircraft for the RAF Museum in its capacious hold.

On this occasion the cargo was a Fairey Swordfish—the famous



Second DC-10 flies; following the first aircraft of this type which made its maiden flight on August 29 and has now logged over 85 hours of test flying the second aircraft in American Airlines colours took to the air on October 26, 1970.

'Stringbag' torpedo bomber used so valiantly by the Royal Navy at Tarranto and in strikes against the *Bismark* in World War 2.

The engine of the Swordfish which has spent recent years in Canada, will be used by the Royal Navy as a spare for its own Swordfish which is kept in flying condition at RNAS, Yeovilton, Somerset.

In recent years, Air Support Command have made a considerable contribution to the country's awakened interest in historic aircraft. A Command Hercules brought a Hawker Hind from Afghanistan in 1968; another Hercules flew a Sopwith Snipe from Canada. Only recently a Belfast returned to Brize Norton with the fuselage of the sole surviving Supermarine Stranraer flying boat in its hold. Internally in the United Kingdom, vintage aircraft of the Shuttleworth Collection have been moved around the country utilising training flights to enable members of the public to get a close glimpse of historic aircraft such as the Bleriot IX and Sopwith Pup.

Westland Lynx starts test

A FURTHER stage in the advanced development programme of the Westland Lynx multi-service helicopter was reached on September 24 when the first pre-production machine, which is to be used primarily as a test vehicle for the rotor transmission and other dynamic component systems, started its ground running tests successfully. Powered by two Rolls-Royce BS 360 turbine engines, this first machine is a complete aircraft in all aspects and is the first of a batch of 12 pre-production helicopters which will be used for various systems tests involved in the Lynx development programme. The Westland Lynx is a part of the Anglo-French helicopter programme involving Westland Helicopters and Aerospatiale (SNIAS) and is to be produced for the Royal Navy, French Navy and British Army. It is also considered a contender for the United States Navy LAMPS (Light Aircraft Multi-Purpose System) programme.

First A-4M Skyhawk delivered

THE United States Navy took delivery of the first production A-4M Skyhawk light attack aircraft on November 3. This aircraft is the first of a series to be built by McDonnell-Douglas Corporation for the US Marine Corps. It is the newest and most powerful model of the versatile Skyhawk line and in a brief ceremony on the Company flight line, the aircraft log books were handed over by the manufacturers to Captain K. B. Mattson, the Naval Plant representative officer at Douglas.

Immediately afterwards, the Skyhawk was flown to the Naval Air Test Center, Patuxent River, Maryland, where it is undergoing Navy Bureau of Inspection and Survey trials. Further A-4Ms will take part in the programme as they come off the production line.

This version of the A-4M is the seventh in the Skyhawk series and combines new technology with the aircraft's combat-proven aerodynamic and structural design. Advantages of the new aircraft include a 20 per cent increase in engine thrust over that of the A-4F, its immediate Skyhawk predecessor. The A-4M is powered by a single Pratt & Whitney J52-P-408A engine developing 11,200 lb of thrust compared with the 9,300 lb thrust of the A-4F engine. The added power increases the Skyhawk's manoeuvrability, rate of climb and acceleration—all expected to

enhance its impressive record of combat survivability.

Other new features include a drag chute for short-field landings, a self-contained engine starter, enlarged pilot head room and substantially improved visibility. The A-4M retains refinements introduced on the A-4F model including nose-wheel steering, wing lift spoilers for better cross-wind and short-field landing performance, and an emergency ejection system which allows the pilot to eject at zero altitude and zero speed. Designed for forward-area bases or from carriers, the A-4M can carry all types of modern tactical armament.

More than 2,700 Skyhawks have been produced by McDonnell-Douglas since the small but rugged jet first entered service with the US Navy in 1956. The Marines are currently operating A-4C and A-4E versions from carriers and advanced landing strips in Vietnam. The A-4F is on first line duty with the US Navy's attack aircraft carriers. Skyhawks are also in service with units of the Argentine Air Force, Royal Australian Navy, Israeli Air Force and the Royal New Zealand Air Force.

A-4M prototypes have been in flight development at McDonnell-Douglas since April 1970. Skyhawk production is centred at the Company's Long Beach, Torrance and Palmdale, California, facilities and development and acceptance flights are conducted at Palmdale.

'New Eyes' for RAF's tactical aircraft

IN the past, reconnaissance aircraft have been limited in operation by considerations of weather and light. In low cloud conditions, particularly on active operations, reconnaissance crews have been forced, either to abandon their task and return without vital information or fly to a dangerously low level, risking their lives and aircraft to get the photographs they were ordered to take. At night, visual photography could only be achieved by the use of synchronised flash equipment and this, too, could be rendered useless by the presence of comparatively small amounts of cloud.

Not only the crews were limited by their equipment. The aircraft themselves, once roled for reconnaissance duties, frequently had to be employed exclusively in that task because it was not possible to remove the photographic equipment and refit armament fast enough to meet a different military requirement.

Recently, almost unnoticed in the busy daily routine of the station, a Phantom from RAF Coningsby, Lincoln, took off with a new reconnaissance 'pod' which has now been accepted into service and will solve all these problems.

The Phantom reconnaissance pod, assembled by EMI, is a sophisticated piece of equipment designed to give comprehensive coverage by employing various types of sensor at low level to suit changing conditions of light and weather. It can also be used in conjunction with a medium altitude vertical camera.

Below: OV-10 Bronco, 0-9546, which has been delivered to the West German Air Force as the forerunner of a number to be delivered later equipped with auxiliary jet engines and to be used for target towing duties. Bottom: The second Sikorsky CH-53G heavy lift helicopter, 135 of which have been ordered for the German army. VFW are taking part in the production programme. (Franz Schaedler photos).



The Lockheed XH-51N research helicopter loaned to RAE Bedford by NASA's Langley Research Centre being unloaded after its trans-Atlantic journey in an Air Support Command Hercules. Above: First production A-4M Skyhawk for the United States Marines taking off from Long Beach Municipal airport on its delivery flight. The A-4M has a more powerful engine (Pratt and Whitney J52-P-408A) than its predecessors.

A fan of five optical cameras (four F95s and one F135) can be employed in daylight. At night, four F135 cameras are used in conjunction with an electronic flash for visual photography. In bad weather, two other sensors, a sideways-looking radar (SLR) and infra-red linescan (IRLS) can be used by day or night, thus eliminating the need for crews to fly at very low level in bad weather conditions. This remarkable piece of equipment can also be adapted for special tasks by fitting an F126 vertical camera or an F95 oblique with 12 inch lens.

The present pod is exclusively for use with the Phantom but reconnaissance pods will also be fitted to the Harrier and Jaguar. The ability to fit and remove the equipment quickly will give all these aircraft a greatly increased flexibility of role and ensure the best possible utilisation of aircraft to meet the prevailing air requirement.

NASA research helicopter in Britain

ONE of the XH-51N research helicopters which were built to test the rigid rotor system, arrived at RAE Bedford on board a Hercules transport aircraft of RAF Air Support Command on September 30 for a six-month stay.

The helicopter, which is on loan from NASA's Langley Research Center, will be used at Bedford for 20 flying hours, during which the effects on stability and control of varying the inertia of the gyro and associated springs of the control system of the rotor will be studied.

The XH-51N is interesting partly because of its semi-rigid or hingeless rotor—a feature in common with the Westland Lynx helicopter now being tested at Westland's and also as it is fitted with the Lockheed integral gyro control system which has since been incorporated in the Lockheed Cheyenne helicopter. In the Spring of 1967, an XH-51N fitted with a small stub wing and additional jet engine set up a speed record of 302.6 mph. Bedford's aircraft was delivered to Langley in December 1964 and since then has been used for handling studies and investigation of rotor blade stresses during low flying below the tree-tops.

THE final instalment of John Milsom's story of the Stalin tank is unavoidably held over until next month due to pressure of space in this issue.

In our new book reviews in the November 1970 issue we gave the wrong price for the Locomotive Profiles. In fact they cost 8s each.

FOR some time now, British model railway enthusiasts have been looking wistfully at the new developments in N gauge on the Continent. N, by the way, stands for 9 mm gauge which at one time used to be thought of as 000 gauge. Nothing to do with narrow gauge since, at present, all N gauge models are models of standard 4' 8½" gauge prototypes running on 9 mm gauge track. Over a number of years, Continental manufacturers have been producing glossy brochures showing a tempting range of items. Arnold Rapido, for instance, who pioneered N gauge only 10 years ago, have a full-colour 56-page brochure

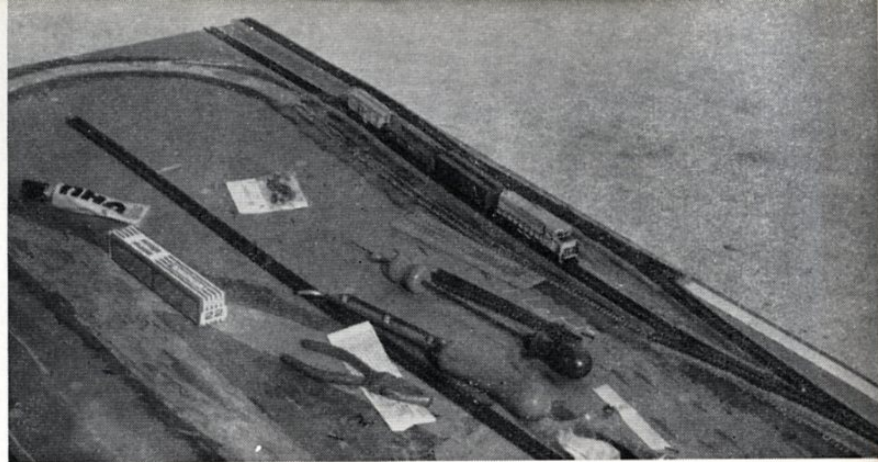
A look at 'N' gauge

THE POTENTIAL OF THE SMALLEST SCALE

which shows no less than seven basically different types of steam locomotives, six different electric locomotives, eight different diesels, umpteen different coaches and wagons and a range of accessories which even includes a travelling circus. Trix, Atlas Rivarossi, Fleischmann, Lima, Vollmer, Pola-N and Heljan are equally dazzling with their wide range of items. With all due respect to the few pioneer British manufacturers, it has not been so easy for a modeller to build up a comprehensive N gauge model railway system truly representative of British practice.

Many modellers, no doubt despairing of ever seeing a full range of British outline models, have turned to Continental railways and many a spare room, garage, loft, and even garden, boasts a DB Pacific or a Prussian 0-6-0 tank wending its way through typically Teutonic mountain scenery. These are all very fine but this does not satisfy the nostalgic British modeller who tries to turn the clock back with his modelling to recapture happy days spent observing the full-size locomotives and trains which can be seen no longer. As magnificent as a DB Pacific is, and however accurate the Arnold or Minitrix models are of the prototype, they do not evoke the same nostalgic thoughts to a British railway enthusiast as would, say, an N gauge 'Castle' or the excellent Peco 'Jubilee'. The Peco 'Jubilee' is, of course, a truly magnificent

Two models of British prototypes to 1:148 scale are the excellent Peco 'Jubilee' class 4-6-0 which actually has a powered tender (left), and a Minitrix BR standard brake-composite in maroon finish. Wrenn sell similar coaches with the earlier type of bogie and these are just about passable as LMS type coaches in this small scale when finished in maroon.



Tracklaying in progress on a 4 ft x 2 ft baseboard which in N gauge allows quite an extensive layout in a small area. The American diesel locomotive is a Wrenn-Lima GP30 with an Arnold stock car, a Wrenn-Lima gondola, and a Japanese-made Con-Cor caboose, all to the American and European standard 1:160 scale. Track here is by Peco.



BY **NORMAN SIMMONS**

model but it has been the exceptional odd-man-out since it was first introduced and there has been very little British rolling stock of comparable vintage, that is the late LMS era, to accompany it.

One of the most important basic ingredients that has been missing from the British N gauge model scene for so long has been short wheelbase British goods rolling stock. Now, almost overnight, the situation has changed dramatically and a veritable flood-tide of wagons are immediately available in the shops or are

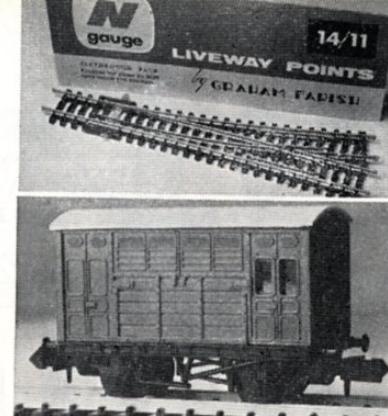
promised shortly from Graham Farish. The different varieties cover an astounding range of prototypes; 3 plank, 5 plank and 7 plank open wagons, all-steel mineral wagon, tarpaulin open wagon, single ventilator or twin ventilator 12-ton box vans, cattle van, fish van, horse box, tar wagon, container wagon with container and bolster wagon. As if that was not enough, the chassis is available separately for scratch builders. A GWR brake van is also shown in the Graham Farish N gauge Handbook and other rolling stock items, including some four-wheeled coaches are, so we are informed, under development. One of the most exciting developments to look forward to will be the Graham Farish GWR 94XX Class Pannier Tank which it is hoped will be ready for sale by Spring 1971. Graham Farish have done much for OO gauge with their Formoway track—they were the original inventors of flexible track—Liveway points, and their various items of rolling stock and accessories. It is apparent they are going to make equally as worthy a name for themselves with N gauge.

Perhaps now might be as good a time as any to survey the British N gauge scene since it is at long last building up into a reasonably comprehensive picture. The forementioned Peco 'Jubilee' is, of course, still the prime scene stealer. Every inch of it looks like the prototype and

the fine detail and attention that must have been lavished on designing the model makes it worth every penny of the asking price, £9 10s. One expects to pay for a worthwhile product such as a good watch, a precision camera or a piece of jewelry. The Peco 'Jubilee' is a craftsman product of comparable quality. As well as looking good the performance and slow-speed control is excellent.

Speaking generally again about N gauge, the one thing that has struck me has been the smoothness of control and reliability of all the model locomotives I have seen working, a standard of operation not so consistently found in the larger gauges. Whereas in OO gauge I have seen some locomotives cavorting like rocking broncos with the motor and transmission badly out of mesh, with all the attendant noises, and rolling stock with oval wheels, I have yet to see such an exhibition in N gauge. Possibly it is because the tolerances have to be finer; things have to be spot-on with N gauge or else they won't work at all! The haulage power of the locomotives is also so consistently phenomenal, too, and train lengths even longer than the full-size prototype are possible.

It is a disappointment to me to see the question of scale rearing its ugly head again with this new gauge the same way as it did with OO and HO gauge. Although both Britain and the Continentals use the same 9 mm track gauge, the Continentals have standardised on 1:160 scale or approximately 2 mm to the foot, but most British manufacturers have gone for 1:148 scale or what is peculiarly described as 2, 1/16 mm to the foot. Presumably this is to enable the larger loading gauge of prototype Continental rolling stock to be accommodated within the restricted British loading gauge. This is, however, an artificial dodge and one I would have thought hardly worth repeating. Thankfully, the difference does not seem to be quite so apparent as it is with OO and HO but it has already led to some confusing results. The Tri-ang/Wrenn N gauge Micromodels manufactured by Lima in Italy have suffered badly. Perhaps their English-based masters were not so watchful of Lima as Peco were of Rivarossi when the LMS 'Jubilee' model was designed. As a result, just about every example of Tri-ang/Wrenn N gauge rolling stock seems to have a scale of its own with the guard's van, for example, towering over everything in height and the buffer levels varying with every item. This is so bad that even the manufacturer can only describe the range as approximately 1:160 scale. It is very difficult to understand who Tri-ang/Wrenn are aiming at. Really, N gauge is too small for the kids and yet anyone with any mature taste is going to find so much lacking. The coaches are about the best items and because they are fitted with the old type BR bogie they have a greater conversion potential than the Minitrix coaches, which are fitted with the modern post-1963 Swindon B4 bogie.



Top: One of the new Graham Farish N gauge items is the point in the Liveway series of track recently introduced. Above: From an extensive range of pre-BR British rolling stock from Graham Farish this London, Tilbury & Southend Railway horsebox is one of the prettiest and most exquisitely detailed.

The Minitrix range is described as 1:160 scale. The latest 1970/71 catalogue shows an ambitious expansion in the range of rolling stock, foremost of which will be the new BR 'Britannia' Pacific, the introduction of which has just been announced. This locomotive will join the BR Type 2 and Warship diesels already available. Coaching stock is to be expanded with the introduction of a BR Sleeper and Parcel coach in either rail blue/grey or maroon livery. A new range of British short-wheelbase wagons will include a 12 ton box van, 16 ton mineral wagon, six different Private Owner coal wagons and a brake van. One of the most interesting aspects of the Minitrix system is the comprehensive range of trackwork. Curves are available in six different radii and, as if that was not enough, flexible track is also included. Points in different radii are also produced and special mention must be made of the two sizes of points on curves and two types of double slip.

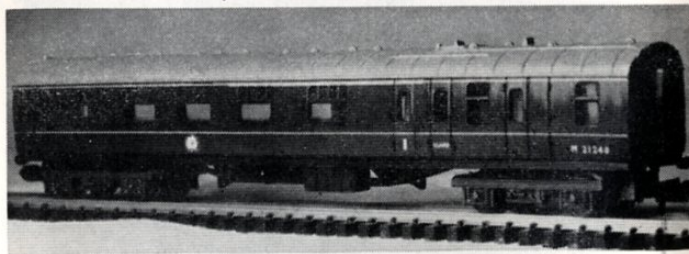
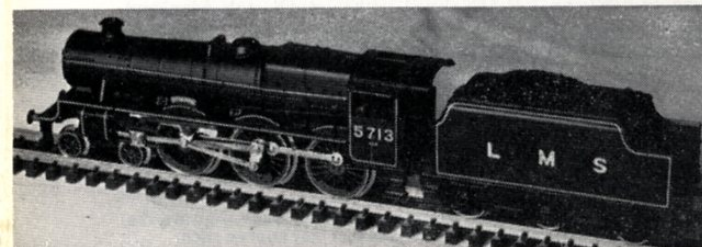
Trackwork is in fact well catered for from every stable. Peco have, of course, been producing their flexible track for quite some time and their range of pointwork includes 18 inch points, 2 ft 6 inch Y point crossing and the commendably large 3 ft radius points which they rightly claim as the last word in scale realism. Just think of it, the equivalent of 6 ft radius in OO gauge! Graham Farish have designed all their point and crossing work on the Liveway principle, that is the current is switched according to the setting of the point blades and is passed continuously to the locomotive, there being no plastic frog on which the engine can stall. The Graham Farish points are 18 inch radius and there is a 3 ft radius Y point and a crossing. Of course, all the Continental trackwork by such as Arnold Rapido, Atlas Rivarossi and Lima can be used on a British layout since the track gauge, 9 mm, is the same throughout. There certainly is no lack of variety to choose from.

One thankful area of standardisation in N gauge, compared with the hotchpotch of OO/HO, is couplings. All

British rolling stock items are fitted with the same type of automatic coupling, thus ensuring complete compatibility one make to another and with most other Continental models. It must be admitted that the standard N gauge coupling is not very pretty and I am told that the Graham Farish wagons look very much better when fitted with less conspicuous couplings allowing closer coupling of the wagons. I believe Peco have something up their sleeves in this respect, but meanwhile I think we can at least be thankful that there is such a thing as a 'Standard' N gauge coupling and it does work very well.

When one first becomes acquainted with N gauge it takes some length of time getting used to the new dimension. Space, always at a premium in model railways, suddenly appears less of a problem and the new-found freedom can make one slightly light-headed for a while! Just think, the Peco 'Jubilee' is but 5¼ inches long over buffers, Minitrix coaches exactly the same length and the Graham Farish wagons just 1½ inches long. Tracks need not be more than 1½ inches apart to cross each other and the necessary gradient to lift one line over the other need only be a little more than one yard long. A four-track main line only needs a space 5 inches wide and a station platform long enough for a six coach train need only be a yard long. All this is reality today and your nearest model railway stockist is probably holding stocks to set you up in this new dimension right away! Whereas it is tempting to think of the smallest space in which one can build a layout—4 ft x 2 ft is not impossible—it is perhaps far more rewarding to think what one can achieve in the space one has become accustomed to with OO. Imagine, for example, a small box room 10 ft x 7 ft 6 in and the scope this would provide. Wide sweeping 2 ft radius curves—equivalent to 4 ft in OO—would mean the main straights could be nearly 6 ft long or long enough to take a 12 coach train. Just think of the depth of scenery one can allow for with a double track main line occupying only 3 inches of road bed.

The panoramic possibilities of N gauge seem to me one of the most important qualities to be exploited and I visualise something like an architect's model as being the style to aim at. Something which will allow a full surrounding landscape to be created which will show off the railway in a realistic and unabridged setting. In addition to the space advantage, I am encouraged by those I know who have already taken up N gauge to hear of the success they have achieved. More successful than any other gauge I have heard it described and I must say I have been convinced by the results I have seen. There is certainly a great future for N gauge and, as I hope to have shown, at long last British N gauge is really on its feet. 2, 1/16 mm to the feet to be precise!



1815

Modelling the armies of the Napoleonic era for wargames
by Robert C. Gibson

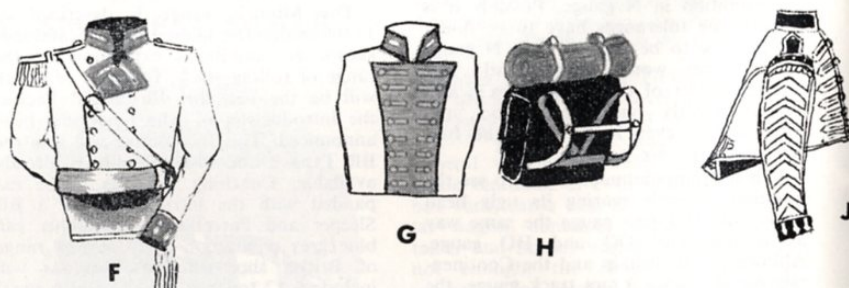
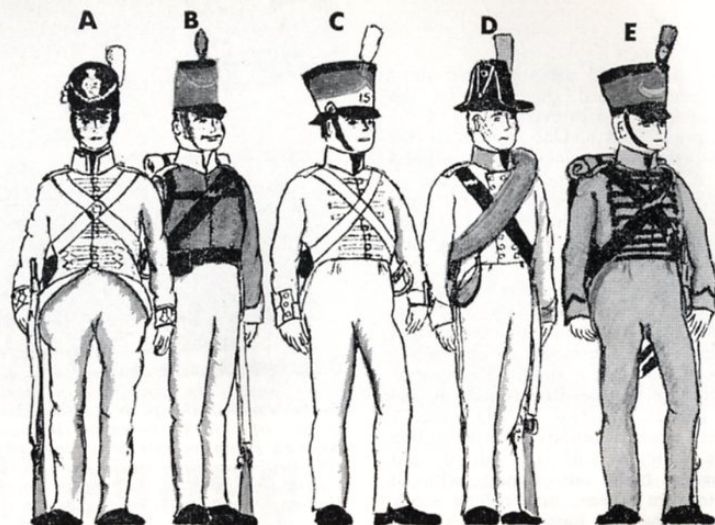
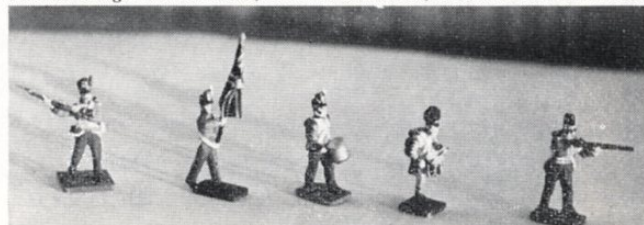
Part 2: Anglo-Dutch Infantry

ALL British infantrymen in 1815 wore a short-tailed coat, red with white turnbacks for line and light infantry regiments, and dark green with turnbacks in the regimental colours for Rifle Regiments. Officers wore a double-breasted coat with a plain front, other ranks a single-breasted coat with ten lines of white tape across the front, evenly spaced (except for the Foot Guards: 1st Foot Guards—eight lines, single spacing; 2nd Foot Guards—10 lines in pairs; 3rd Foot Guards—9 lines in groups of three). Cuffs, shoulder straps and collars were in the regimental colours, piped in white as follows:

1st, 2nd and 3rd Foot Guards—Dk Blue/gold buttons
1st, 4th and 23rd Regts of Foot—Dk Blue/gold buttons
(Like regiments of the King's German Legion)
52nd*, 27th and 40th Regiments—Buff/gold buttons
14th and 81st Regiments—Buff/silver buttons
28th, 44th and 91st Regiments—Yellow/silver buttons
51st* Regiment—Light green/gold buttons
54th Regiment—Green/silver buttons
69th Regiment—Green/gold buttons
73rd Regiment—Dark green/gold buttons
32nd and 59th Regiments—White/gold buttons
35th Regiment—Orange/silver buttons
30th Regiment—Primrose/silver buttons
33rd Regiment—Red/silver buttons
(* 51st and 52nd were Light Infantry Regiments)

Each regiment of Foot Guards and ordinary Line infantry had six companies per battalion: one grenadier company and one light company, and four

Below: Models of British infantry seen from front and back. The figures depict (left to right, left side) Infantry of Line, Foot Guards ensign with colours, Guards drummer, Black Watch drummer, Foot Guards private. Rear view shows them in reverse order.



(A) Foot Guards, private. (B) Rifle Regiment, private. (C) Dutch Infantry. (D) Brunswick Advance Guard. (E) Brunswick Line Infantry. (F) Officer's coat buttoned up. (G) Officer's coat with turnbacks. (H) Infantry pack and harness. (J) British drummer's coat with tape decoration.

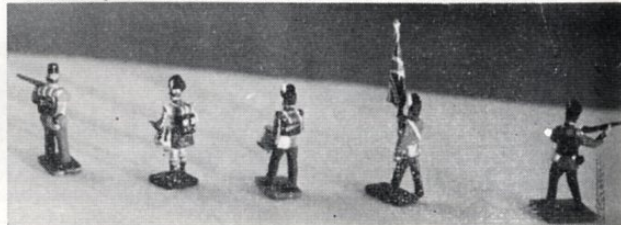
battalion companies. The 'flank' companies, ie, the grenadier and the light company, wore 'wings' on the shoulders in regimental colour with white tape bindings. The companies were further identified by the plumes on the tall-fronted black shako; white for grenadiers, green for light infantrymen and white over red for the others.

Drummers of Foot Guard and Line Regiments wore a similar coat and shako to the fighting man, but except for regiments with dark blue facings, the coats were in reverse colours, eg, the 73rd Regiment had green coats with red collar, cuffs, etc, with white tape not only on the chest but on the seams of the sleeves and the back of the coat. White tape chevrons, seven between shoulder and cuff, decorated the sleeves. Regiments with blue facings had red coats, blue facings and white tape as described.

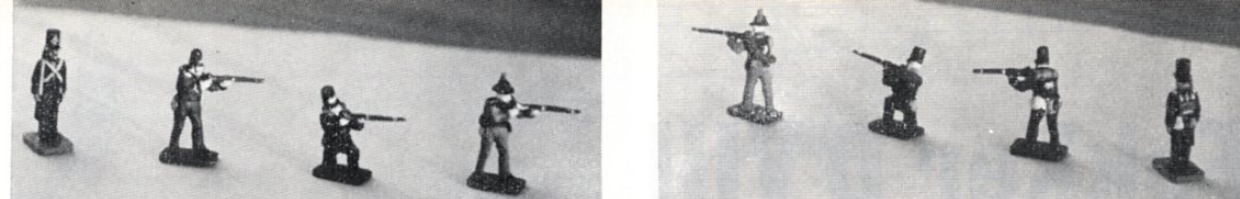
Drums were in regimental colour with red outer bands.

Light Regiments wore the tall conical shako of the Rifle Regiments with the red coat, white belts and black equipment of the Line Infantry. All companies wore 'wings', and a green shako plume. Light Infantry had bugles instead of drummers: the bugle was of modern pattern with green cords.

Rifle Regiments wore dark green coats and the conical shako and green plume. Both regiments were present at Waterloo: the 95th in three battalions, the 60th represented by a single company. The regimental distinctions were red cuffs, collar turnbacks and shoulder straps for the 60th; the 95th wore black with white piping. Equipment and belts were black leather. King's German Legion Light Battalions wore Rifle uniform with plain black.



AIRFIX magazine



Above: More figures depicting (left to right, left picture) British Light Infantry private, Dutch infantry, Brunswick infantry Brunswick advance guard. Order is reversed in second picture.

All infantrymen wore dark blue-grey trousers and black boots. Foot officers wore dark grey trousers as for the men; mounted officers wore white breeches, and a bicorne hat with gold tassels; the horse had a dark blue shabraque and holster covers, edged in gold with the monogram 'GR' in gold.

General officers had red coats with blue lapels, cuffs, and collar decorated with gold lace (lieutenant-generals had six chevrons of gold on each arm from the cuff upwards; major-generals had four). Hat and horse furniture were as for mounted officers of infantry. It was the fashion for many officers to wear their coat with the lapels either fully buttoned back, or with the top two buttons open, in a vee shape.

Highland Infantry

Although some of the previously-mentioned regiments contained Scots, there were only four Highland regiments at Waterloo. One, the 71st Foot, was a Light Infantry regiment, and dressed as such, with one Scottish touch—the former blue bonnet was shrunk over the tapered shako, giving a dark blue shako with a red/white diced band. No plume was worn.

The line regiments of Highland Infantry wore the kilt: basically the same pattern was used by all three: a dark green cloth with dark blue squares (five between knee and waist) to which an overstripe was added across the squares horizontally and vertically. The colours were:

42nd — no overstripe
79th — red overstripe
92nd — yellow overstripe

Coats were red for all ranks with white turnbacks and tape. Regimental colours were worn with white piping on collar, cuffs and shoulder straps as for other line regiments; colours were dark blue for the 42nd, dark green for the 79th, both with gold buttons, and the 92nd had yellow with silver buttons. The black feather bonnets had a red/white diced band, front peaks, and plumes (hackles) as for line infantry, except for the 42nd, whose battalion companies had red hackles. Stockings were red/white diced with red 'laces'; gaiters were dark grey, boots black.

The drummers of the 42nd (Black Watch) had red coats, blue facings and the taping described for drummers of line infantry. The hackle was yellow with a red top. The pipers were similarly dressed, without the chevrons. The pipe bag and ribbons were dark green. Belts were white; a short sword was worn.

The drummers of the 79th (Cameron Highlanders) and the 92nd (Gordon Highlanders) wore green and yellow

coats respectively, again decorated as for similar English line regiments; hackles were red over white. Pipers wore similar coats, again without the chevrons. Equipment as before.

The 71st Highland Light Infantry were unique in possessing pipes, drums and bugles. The drummers wore a yellow coat with red cuffs and collar, the full quota of tape, white with blue spots, and red 'wings' taped in white/blue. Grey trousers were worn with white belts. The headwear was a peaked cap with a soft dark blue crown and red/white diced border. The buglers wore the yellow coat with 'wings' but without the elaborate tape decoration. The brass bugle had green cords; the trousers and shako were as for the fighting men. Pipers wore a similar red coat to the fighting men, with wings, crossbelts, and shako as before.

Belgian and Dutch Infantry

All branches of the Dutch Infantry wore a single-breasted coat similar to the British pattern, dark blue for Line Infantry and dark green for Light Infantry. Collar, cuffs, chest tape and piping were yellow for Light Infantry, and in the following colours for Line Infantry:

1st and 9th Battalion—orange
2nd and 10th Battalion—yellow
3rd and 11th Battalion—white
4th and 12th Battalion—red
5th and 13th Battalion—carmine
6th and 14th Battalion—light green
7th and 15th Battalion—light blue
8th and 16th Battalion—rose red

All coat-tail turnbacks were red; buttons gold. The shako was the bell-topped one shown in the sketch for Dutch regiments (and officers of Belgian infantry) with the British shako for Belgian regiments. Regiments 1 to 8 appear to have been Dutch and Nos 9 to 16 Belgian. Dark grey trousers were worn; webbing equipment was white for line infantry and black for light infantry, all pouches were black, as were boots.

Brunswick Infantry

The majority of the Duke of Brunswick's Corps consisted of infantry, organised in two brigades of three battalions each, and four companies of skirmishers (riflemen) in the Advance Guard. Except for the Advance Guard, all infantrymen were clad in black jackets, trousers and shakos. The Light Infantry brigade had a white-metal hunting-horn on the shako, which had an acorn-shaped pom-pom coloured sky blue over yellow. The battalions were distinguished by the colour of their shoulder-straps and collar: 1st pink, 2nd yellow, 3rd orange. The Line Battalions wore a shield as shown in the sketch, with a sky-blue-over-yellow plume, each battalion

identified by shoulder-straps and collar: 1st red, 2nd green, 3rd white. The Leib- (Lifeguard) Battalion was dressed as the Line Battalions, with a black hanging plume on the shako, as for the Artillery (see Part 1), and a silver skull-and-crossbones on the front of the shako. Distinctive colours were sky blue. Riflemen of the Advance Guard were dressed in light grey trousers and jacket with green collar, cuffs and shoulder-straps. Buttons were brass. The slouch hat was black with green piping and plume.

The webbing belts for the whole Brunswick Infantry were black, as were packs and pouches. Blankets were dark grey. Canteens were light blue.

Nassau Infantry

Nassau clothed her infantry in dark green jackets with black collar, cuffs and shoulder-straps piped red, and with the front opening and bottom edge of the jacket also piped. The grey trousers were also piped red down the seams. A black French shako with a brass sunburst on the front was worn. Cross-belts were white, pouch was black, blankets grey, and the knapsack brown hide with white slings.

Modelling the Infantry

A number of different sets of Airfix soldiers will provide suitable figures. Taking the examples in the photographs, the British Line infantryman comes from the German 1914 Infantry, the trousers converted by cutting round the ankle, and the coat cut away in front and cut down behind. The head is a transplant, made in the same way as that for the drummer, who is an 'ex-Confederate' whose shouldered rifle is cut away, as is the coat. The cap is cut down to 2 mm high with a 1 mm deep peak, and a 4 mm square piece of notepaper, rounded at the top corners. Plasticine or cotton wool plume is added at the side. The drum is made from soft sprue. The Colour Bearer comes from the Guards Colour Party, again with a transplant head, but very little other work other than cutting away the front skirts of the tunic. The Light Infantry and Rifle Regiment privates came from Confederate soldiers, the shako trimmed down from the slouch hat, and the extra height up to 4 mm added with a sliver of plastic or Plasticine. The Dutch Infantryman could come from either a Union or a Confederate soldier, since the upper part of the hat or cap above the 'peak' is removed and replaced with a 4 mm high piece of sprue. (The rear peak can be shaped from the 'excess' hair.) A similar method is used to make the Brunswick infantryman, but no rear peak is needed. The simplest is the

Continued on page 261

Fokker D VIII

AN ATTRACTIVE MODEL WHICH
IS PART KIT CONVERSION AND
PARTLY SCRATCH-BUILT

By Gerald Scarborough

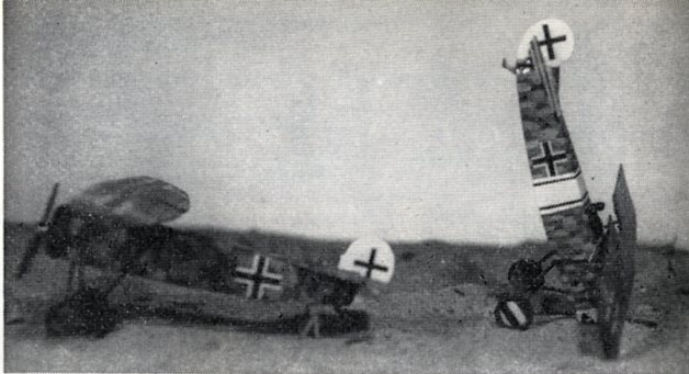
THE Fokker E V (Eindecker V) was developed after successful flights of a D VII flown without its bottom wing, followed by an experimental parasol monoplane, the V 26. This was entered in the fighter contest at Johannisthal in April 1918, at which it was unanimously voted the winner. Designed by Reinhold Platz, its rapid take-off and climb and first-class manoeuvrability made it a suitable replacement for the D VII. Powered by the 140 hp Oberursel rotary engine, construction followed the usual Platz design of welded steel tube, wire braced, fuselage, steel tube tail surfaces, streamlined steel tube undercarriage and centre section struts and with a large aerofoil covering the axle. The wings used tapering box spars, ply ribs and were covered in thin plywood. All surfaces were fabric covered as was the fuselage.

Of the first six aircraft sent to the Front, three crashed through failure of the wing structure and production was stopped. The trouble was traced to the rear spar which had been altered to conform to the specification of the authorities as a result of their loading tests. A return to Platz original, more flexible design, cured this trouble and the wing proved satisfactory. The aircraft was redesignated D VIII and supplied to the Jagdstaffeln where it became operational alongside the D VII.

As an early example of a cantilever wing monoplane it is well worth modelling and construction is simplified by the cleanliness of the design, absence of rigging wires and simple fuselage shape. *Fighter Aircraft of the 1914-18 War* or *Von Richthofen and the Flying Circus*, both Harleyford Publications, have several photographs of this aircraft and I would suggest a visit to your local library as a first step, as it is valuable to have as many pictures as possible by you.

For my model I used the cowl, engine, prop, wheels, guns and pilot from the Airfix Fokker Dr I. Unfortunately the tailplane is too small and regrettably this and all else should be consigned to the inevitable scrap box in the hope that one day it will come in useful.

FUSELAGE The fuselage is constructed with sides cut from 15 thou plastic card, but allow an additional millimetre depth at the front ($\frac{1}{2}$ mm at the top $\frac{1}{2}$ mm at the bottom) to the size on the plan to cater for the curve. Impress the line of the streamlining rib from front to cockpit and 'pinch' to correct shape bending to a curve at the front as section 'A'. Cut out the bottom from 10 thou plastic card, and cut out the four shaped bulkheads from 15 thou allowing for thickness of sides and bottom, etc. Stick the bulkheads in position on one of the sides first, then add the other side and the bottom holding all together with small strips of Sello-tape and set aside to dry. Cut out the top from 10 thou plastic card slightly over-size and cement in place after first bending to a curve allowing an overlap which can be trimmed off with a sharp knife when dry. Drill out the holes for the under-



carriage and centre section struts and for control wires using a very fine drill in a pin-chuck or a needle heated in a candle flame. Finally, fit the machine guns in place on the top decking.

TAILPLANE, FIN AND RUDDER Cut out from 20 thou sheet and sandpaper to section, with rounded leading edge tapering to thin trailing edge. Score the line of the elevator and rudder hinge on both sides or make as separate items. I usually like to give a bit of 'set' to elevator, rudder and ailerons as my models are hung in a showcase and look a bit dead if all are 'flying' straight and level. It is only a small point but does give a bit of life to even a simple kit model.

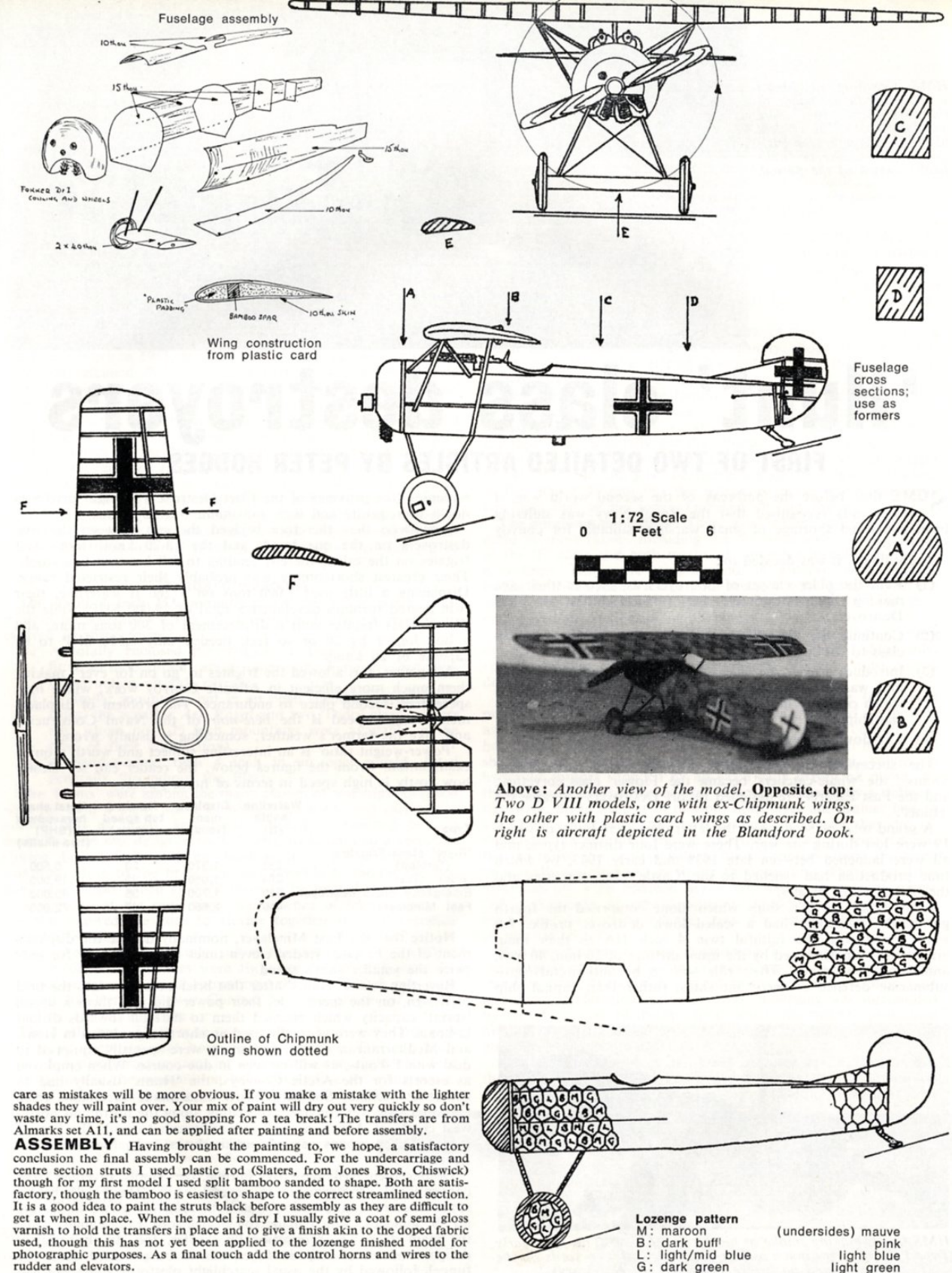
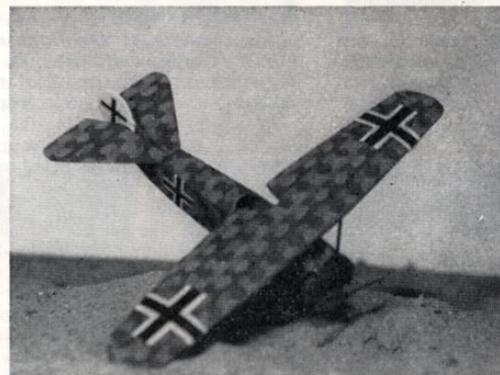
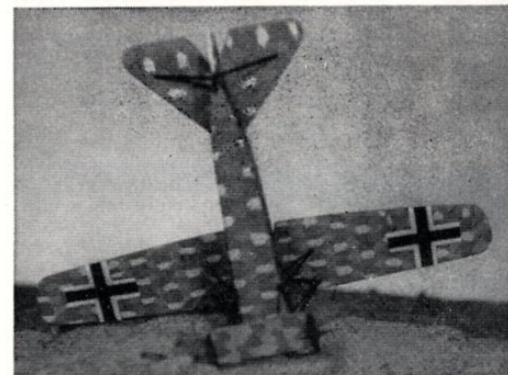
WINGS These were a plywood covered structure and they do not have the sag between ribs that is characteristic of other aircraft of this period. They can therefore be made quite plain. The first model I made had built up wings—10 thou plastic with a tapered spar of bamboo, plastic padding filling and a lot of careful bending. The sectional view will show how this is done but in this small scale it is not easy. Another alternative is to use laminations of plastic sheet filed and sanded to the right taper and finally given the correct aerofoil section. This is real hard work and I finally settled for cutting the outer sections from the wing of the Airfix Chipmunk. When you have sanded off all the detail they will be just about the right taper and the drawing shows the Fokker wing superimposed on the Chipmunk to show just how this can be done. There are again alternative wings that could be used, eg. FW 190 or other World War 2 fighters, but I think the Chipmunk easily fills the bill. Make the centre section from a sandwich of 40 thou, 10 thou, 40 thou sheet leaving tongues on the 10 thou layer that will fit into the hollow in the outer sections cut from the Chipmunk. Fill in the original aileron lines and score in fresh ones when dry, or alternatively cut them out with a fine saw and reset at the angle you require. When you have all three sections shaped and smooth, cement them together noting that there is no dihedral though it will be necessary to prop up the tips fractionally due to the taper. When dry drill out the holes for the supporting struts in the centre section taking care not to go right through.

PAINTING For one of the models I made I used the colour scheme as depicted in *Fighters 1914-19* published by Blandford. I used Humbrol matt paints, mixing dark blue, yellow and black until the right shade was obtained for the wings, ie. a dark green. From photographs it would appear that the wings had tapes over the rib positions to cover the panel pins but, reduced to 1:72 scale, the thickness of these is hardly worth a mention. However they do show as a lighter shade so, if you can, apply fine lines across the chord in a lighter shade of the main colour. The fuselage and axle aerofoil are lozenge pattern, with the tailplane black and white stripes, and the rudder and part of the fin in white.

LOZENGE PATTERN Here we strike a snag as most of the books I have read seem to be at variance with regard to the correct colours and on a relatively rare bird like the D VIII the position is not easy. However I used the colours depicted in *Fighters 1914-19* as this is a very attractive scheme and must be one of the very few non-standard colour schemes to appear on the D VIII. The usual factory finish was overall lozenge with a white fin and an aluminium cowl though this was, according to photographs, often painted over in a dark colour, probably black or red.

If you have never tried painting lozenge camouflage it is a rather daunting prospect and I do suggest that you try it out on a scrap wing with some standard colours straight from the can. I have done all of mine freehand with a No 1 brush tapered to a fine point, and it is best to start with the paler shades first. Mix sufficient of the correct colour and follow the pattern as shown in the illustration. Paint on each lozenge of that colour along the top surface of the wing. Try to keep them a regular size and spaced equidistant apart. By the time you have done this, followed by the tailplane and then the fuselage, and mixed up the next colour the wing will be dry enough to start again. Work through each colour keeping regular shapes until finally you will come to the darkest shade. This needs a little extra

Left: Top and bottom views of completed model hand-painted in lozenge pattern as described in text. For a more 'scientific' approach to painting lozenge patterns, see Paul Leaman's articles in the September and October 1968 issues. Model has wings modified from the Chipmunk kit as suggested here.



Above: Another view of the model. Opposite, top: Two D VIII models, one with ex-Chipmunk wings, the other with plastic card wings as described. On right is aircraft depicted in the Blandford book.

care as mistakes will be more obvious. If you make a mistake with the lighter shades they will paint over. Your mix of paint will dry out very quickly so don't waste any time, it's no good stopping for a tea break! The transfers are from Almarks set A11, and can be applied after painting and before assembly.

ASSEMBLY Having brought the painting to, we hope, a satisfactory conclusion the final assembly can be commenced. For the undercarriage and centre section struts I used plastic rod (Slaters, from Jones Bros, Chiswick) though for my first model I used split bamboo sanded to shape. Both are satisfactory, though the bamboo is easiest to shape to the correct streamlined section. It is a good idea to paint the struts black before assembly as they are difficult to get at when in place. When the model is dry I usually give a coat of semi gloss varnish to hold the transfers in place and to give a finish akin to the doped fabric used, though this has not yet been applied to the lozenge finished model for photographic purposes. As a final touch add the control horns and wires to the rudder and elevators.

HMS Cowdray at Malta wearing the funnel bands of the 18th Flotilla (one white over one black). The vertical black stripe signifies the Divisional Commander, or 'half-leader', mark of the period.



'Hunt' class destroyers

FIRST OF TWO DETAILED ARTICLES BY PETER HODGES

SOME time before the outbreak of the second world war, it was already recognised that the Royal Navy was suffering from a marked shortage of small warships suitable for convoy escort work.

Accordingly, it was decided to:

- (1) Refit the older classes of destroyers as Escorts (their age making them unsuitable for further duties as Fleet Destroyers).
- (2) Continue the Escort Sloop programme by a follow-up class to the successful 'Egrets'.
- (3) Introduce a new type of vessel, whose eminently sea-worthy hull was to be based on the 'whale-catcher' design, and which could be quickly built in quantity by small commercial shipyards.
- (4) Lay down a new class of Fast Escorts.

The successors to the 'Egrets' became the famous 'Black Swans'; the 'whale-catchers' became the 'Flower' class corvettes; and the Fast Escorts—re-designed Escort Destroyers—became the 'Hunts'.

A grand total of 86 ships of the latter class were built, of which 19 were lost during the war. There were four distinct types, and all were launched between late 1939 and early 1943, by which time production had switched to the 'Castle' class corvettes and the 'River' class frigates.

Apart from the two ships which alone comprised the fourth group, the remainder had a scaled-down destroyer profile. All were armed with the faithful twin 4 inch HA as their main armament—supplemented by the usual mixture of 20 mm, 40 mm, and 2 pdr pom-poms. Their rôle was to be anti-aircraft/anti-submarine defence of merchant ships, rather than capital ship

screening (the province of the Fleet Destroyer) so high speed was not a prerequisite and their maximum was 25 knots.

Speed-wise they therefore bridged the gap between the true destroyers on the one hand, and the 18-20 knot sloops and frigates on the other, thereby tending to fall between two stools. Their greatest shortcoming was probably their restricted range. Displacing a little over 1,000 tons on a 260 ft waterline, their twin geared turbines developed a total of 19,000 SHP, while the 'River' class frigates with a displacement of 300 tons more, and a hull longer by 20 or so feet, needed only 6,500 SHP to be capable of 20 knots.

Altogether, this allowed the frigates to 'go on for ever', making them much more efficient in Atlantic Convoy work, where high speed took second place to endurance. The problem of displacement—range—speed is the *bête-noir* of the Naval Constructor and, like the farmer's weather, something is usually wrong.

'Power-weight ratio' is an interesting subject and worth a quick examination. From the figures below, the reader can see clearly how costly is high speed in terms of horse power.

Type	Waterline length (ft)	Displacement (tons)	Nominal top speed (knots)	Total shaft horsepower (SHP) (two shafts)
'River' class Frigate (turbine)	283	1,370	20	6,500
'Hunt' class	264	1,050	25	19,000
Emergency class destroyer	339	1,700	36	40,000
Fast Minelayer	410	2,650	40	72,000

Notice that the Fast Minelayer, nominally double the displacement of the Frigate, needed eleven times the horsepower for only twice the smaller ship's speed.

Reverting to the 'Hunts' after that brief excursion into the field of design, on the merit side, their power did give them a useful 'sprint' capacity which enabled them to hare-off towards distant U-boats. They were generally used on short-range duties in Home and Mediterranean waters, and many were specially equipped to deal with E-boats, as will be seen in due course. When employed as escorts for the Arctic Convoys, the 'Hunts' usually had to depart at Iceland. Southern based units made excursions from Gibraltar to cover convoys proceeding along the north and north-west coasts of Africa, as well as northwards towards the Bay of Biscay. Other groups carried similar duties from Malta and the Levant.

Despite their basic destroyer outline, the 'Hunts' diverged from conventional arrangements in several ways. The fore-bridge superstructure configuration was comparatively short in having no 'B' gundeck, which made the bridge look rather high, while the main deck was proportionally shorter, too. In the original design, one set of torpedo tubes was to be provided abaft the funnel, followed by the usual searchlight platform, but there was

to be no second set of tubes, the after superstructure being 'closed-up' accordingly.

Another peculiarity of most of the class was that the bulk of their armament was concentrated aft. Nationally, the British were inclined to pour scorn on foreign warships whose main armament was similarly disposed predominantly towards the stern (secure in the possession of *Nelson* and *Rodney*!) so the arrival of the 'Hunts' on the Naval scene stilled some tongues and set others wagging.

Technically, the armament of the ships was better than that of the 'River' class frigates in both guns and fire control, making them especially useful in areas where air attacks were prevalent. On the whole they were popular vessels and regarded as 'nice little ships'.

Many which survived the war were sold abroad to the European navies and to far-off Ecuador and Nationalist China. *Oakley* had an interesting career. The original ship was turned over to the Polish Navy in 1941, but was lost in 1942. *Tickham*, building, was then renamed *Oakley* and survived the war to be sold to West Germany, together with *Albrighton* and *Eggesford*. Under their new flag, the ships were renamed, and *Oakley* then became *Gneissnau* which caused no end of a stir. *Cottesmore* also changed hands but in a different manner. Sold to Egypt in 1950, she was captured intact by the Israelis in 1955 (at the time of the Suez trouble) and renamed *Haifa*.

One unit—*Brooklesby*—remained with the Royal Navy until just a few years ago, but then only as a Trials ship for newly developed sonar equipment. Post-war, all the 'Hunts', together with the remaining corvettes and sloops, were re-classified as frigates and their original pendant number—L—was changed to F flag superior.

Standard weapons

The Twin 4 inch HA mounting: In the 1930s, work commenced on several twin HA mountings which after development, evolved in three forms:

- (1) A totally enclosed power-operated twin 4.5 inch turret, fitted in modernised capital ships—like *Renown*—and New Construction aircraft carriers.
- (2) A similar mounting, but in an open shield, fitted in depot ships, the wartime *Ark Royal* and two 'Dido' class cruisers (for whom no 5.25 inch mountings were available at the time of their completion).
- (3) A hand-worked twin 4 inch in an open shield, fitted generally throughout the Fleet.

The 'Hunts' were among the many classes of warships equipped with the twin 4 inch, whose combined projectile and cartridge—known thus as 'fixed' ammunition—could be handled by one man. The gun was designed to be loaded by hand, had a vertically closing breechblock and no loading tray. By arranging the trunnions close to the breech, it was possible to mount the two guns at a height which enabled them to be loaded at low angles of elevation; at the same time, the absence of loading trays in the rear allowed the guns to elevate together in their common cradle to 80 degrees.

They were thus admirably suited for installation in a Dual Purpose rôle, although they were always principally AA weapons. Like so many other small mountings, the twin 4 inch was later adapted for Remote Power Control by the addition of electric elevation and training motors.

The 2 pdr gun: There were two marks of 2 pdr gun, both very similar in operation and both equally complex. The gun body was of square cross-section in which was contained the feed mechanism for the ammunition belts. Extending from the water-cooling jacket, the muzzle usually terminated in a cone-shaped



'X' mounting is trained forward in this photograph of Chiddingfold leaving Grand Harbour, while the bridge twin Oerlikons are trained aft. The boats have not been positioned amidships but the forward set of DC throwers have (A. & J. Pavia).

flash-guard. Ammunition was arranged 'concertina' fashion in trays set at the side of the gun body. The guns could be adapted for left- or right-hand fitting in multiple mountings, with the trays outboard, and then the barrels were staggered to give access for loading. Altogether, the pom-pom looked like a king-size machine gun.

The rate of fire varied with the mark of gun, and could be as much as 200 rpm but was more usually about 100 rpm. The spent cartridges were ejected forward beneath the barrel and spewed out in a stream of smoking brass cases.

Like the Gatling in the famous poem, pom-poms were prone to jam, and most Ordnance Artificers who maintained them armed themselves with a wooden mallet. A judicious wallop in the right place generally got the offending gun going again.

The rather archaic nomenclature—2 pdr—described the weight of the projectile and gave no indication of the calibre. This was in fact about 40 mm but the maximum range was significantly less than that of the longer-barrelled 40 mm Bofors.

The pom-pom mountings: There were several varieties of these, fitted in most classes including the 'between-wars' destroyers up to the 'E' class and both marks of gun were installed in similar mountings. They were 'singles' and, in general, were replaced by the four-barrelled Vickers until these, in turn, gave way to the more effective Oerlikon. Granted a reprieve in the war they reappeared in Auxiliaries of all types.

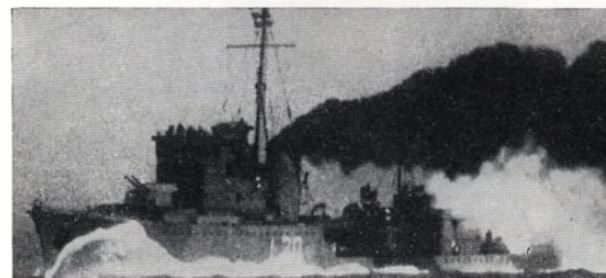
Between the wars, multiple pom-pom mountings were developed, the big eight-barrelled version for capital ships only, and the smaller four-barrelled for general fitting in most classes down to sloops.

Initially, both were purely handworked but were later given power control. The first power system was described as 'power-assisted-hand'. Here, the layer and trainer manned conventional handwheels which either drove the mounting by direct mechanical shafting, or, via change-clutches, opened control valves to hydraulic motors supplied by an electrically driven oil pump. As the mounting moved, the control valves were closed by a differential drive. So to keep it in motion, both layer and trainer had to keep their respective handwheels moving. The faster they did so, the faster the mounting moved, but the only effort required was that to move the control valves, the oil motors doing the work of actually training and elevating the mounting. The direct-drive arrangements were retained as an alternative in case of power failure. Similarly, in some equipments the firing gear was actuated by a handwheel drive but this, too, was ultimately replaced by an electric motor.

Hand-worked close range mountings: The single Oerlikon was the simplest of these. The 'aimer' was strapped to the gun against shoulder rests, 'walking' it around in training and pushing it up and down in elevation. Sometimes, the mounting was surrounded by tiered circular platforms upon which the gunner positioned himself to suit the elevation of the gun. A second member of the gun's crew changed magazines as necessary.

The single pom-pom in the bows of some of the 'Hunts' was the old pre-war weapon. Too heavy to be handled by one man,

Continued on next page



HMS Garth making smoke at high speed in 1940. This is an early Type I 'Hunt', very much as first designed, with two yards on the foremast and no bridge Oerlikons (P. A. Vicary).

HMS Bleasdale in the 18th (Med) Flotilla. She will be featured as a Type III variant in Part 2 of this article. Previously she had had a 2 pdr bow chaser gun, whose splinter shield can be seen. The ship in the background is a surrendered Italian cruiser (A. & J. Pavia). (Note that the A. & J. Pavia photographs shown can be purchased from A. & J. Pavia, 40 Ordnance Street, Valetta, Malta GC, price 3s 6d per print plus 1s postage on any order. Quote this issue and page numbers when ordering).



One of the lovely 'Hunt' Type IVs. This is Brissenden, well armed with three twin 4 inch quad pom-pom, four twin Oerlikons and a triple torpedo tube mounting. Her sole sister ship was the Brecon. The long fo'c'sle extending well aft and the 'knuckle' in the bow plates were quite distinctive features more akin to contemporary sloops and frigates rather than destroyers (A. & J. Pavia).



it had conventional geared drives. Although rather too cumbersome to cope with the high rates of modern aircraft at close range, it was quite effective against E-boats.

The 40 mm Bofors was already in service in the Army, and in fact, the earliest type in the Fleet was known as the Land Service Mounting. Again it was too heavy to be operated Oerlikon-wise by one man, and carried a layer and trainer, as well as an on-mounting loader.

Power-operated close range mountings: As the speed of aircraft steadily increased, it created a two-fold problem for the gunners of the hand worked equipments. They found it more and more difficult to move the gun fast enough to track an aircraft; and when several 'planes were approaching, precious time could be lost if confusion existed between layer and trainer as to which was to be the primary target.

This led to the development of a lightweight power-operated mounting, controlled by an aimer, who sat in a 'sports car' style cab. He was provided with a 'scooter' unit which, when steered left or right caused the training oil motor to run and when twisted up or down, moved the gun in the appropriate direction in elevation. Aiming was by gyro-sights and firing by a trigger on the scooter unit. An off-mounting hydraulic pump unit delivered oil at the working pressure through a swivel joint which allowed 360 degree training, and the basic design was adopted to mount two Oerlikons, a single 2 pdr pom-pom, or a single 40 mm Bofors. So mounted, the single 2 pdr gained a new lease of life as a close-range AA weapon and it appeared as an alternative to the twin Oerlikon in some of the later Fleet destroyers as well as in several cruisers.

Fire control: A standard arrangement was common to all the 'Hunt' class. It consisted of a small open-topped Rangefinder Director on the centre-line in the rear of the bridge superstructure with a 'fish-bone' style radar aerial array carried over the director sights, and elevating with them. Details of this system have already been covered in the recent 'Fire Control' articles in this series.

The four groups

Type I: This group, comprising 20 ships, was ordered before World War 2 and all were launched between 1939 and mid-1940. The lead ship—*Atherstone*—had been designed to carry a torpedo mounting, but this was omitted in the remainder.

The short fo'c'sle deck carried a twin 4 inch HA mounting, with a substantial splinter shield around it for the benefit of the gun's crew. It served, in the words of the Naval Prayer, 'to preserve them from the dangers of the sea and from the violence of the enemy'.

The bridge superstructure was rather box-shaped, with high-sided single Oerlikon sponsons to port and starboard, themselves cross-connected by a gangway which formed the Flag Deck. The bridge Oerlikons were not included in the original design, but were added soon after the ships emerged.

The mast was a simple tripod structure, raked to conform to the slope of the funnel, with its foot on the fo'c'sle deck and its 'legs' at the after break. On the starboard side of the mast, a small radar office was erected on the fo'c'sle deck.

Immediately abaft the funnel came a ventilator trunking, topped by an emergency steering position, followed by a deck space made vacant by the absence of the torpedo tubes. Just abaft midships, the engine room ventilation trunks formed the base of the searchlight platform and here, the surface warning radar 'lantern' was later mounted. Another gap followed, and then came a smallish after superstructure carrying a quad pom-pom, superfiring over a twin 4 inch in 'Y' position on the quarter deck.

The pom-pom was sited well forward, so no blast shield was necessary above 'Y' gun. A shallow splinter shield on the deck edge gave protection to the 4 inch gun's crew. A single depth charge rail and a pair of throwers on the quarter deck made up the anti-submarine weapons in the first instance, but most ships had these doubled-up later in the War.

In addition to the standard weaponry, eight ships of the first group, employed on the East Coast Convoys, mounted an extra single 2 pdr pom-pom in the 'eyes' of the ship. It was used as a 'bow-chaser' against E-boats as previously described.

All ships had a 25 ft motor-boat and a 27 ft whaler carried in screw-jack type davits abreast the funnel, to starboard and port respectively.

The main roof aerial ran from a single yardarm on the foremast (shared by the signal halyards) to a short mast forward of the pom-pom, and at sea the White Ensign was flown from a short staff on the searchlight platform.

Later, several ships had a pole mainmast on the after superstructure, carrying the familiar HF/DF aerial and then the main roof was anchored on the searchlight (or radar 'lantern') platform and the Ensign flown from a gaff on the funnel.

Type II: Thirty-six ships made up this, the largest group, and since no torpedo tubes were to be fitted, better use was made of the available deck space. The bridge was altered and an embryo 'B' gun deck appeared, while twin Oerlikons began to be fitted on the bridge wings in place of the earlier singles. The twins can always be detected because their sponson sides were cut down to allow the guns to depress on the beam. There was a larger structure than before, close up to the funnel, on which the quad pom-pom was now mounted; and although the radar 'lantern' was much as before, the after superstructure was not only larger, but was also shifted forward slightly.

An extra twin 4 inch was mounted in 'X' position, and now that the space aft had been increased, there was more room for the A/S arrangements which flanked 'Y' gun. Even so, some ships in this group had the forward pair of throwers positioned in the waist abreast the surface warning radar.

Exceptionally, one or two doubled up their Oerlikon armament by mounting a second pair of singles on the main deck just abaft the break of the fo'c'sle.

Both whaler and motor-boat were usually, but not invariably, re-positioned further aft, clear of the effect of the pom-pom when it was firing on the beam, and like their sister-ships of the Type I group, those employed in 'E-boat Alley' on the East Coast had the 2 pdr 'bow chaser'.

Type III: There were 28 ships in this group, the bulk of which were launched in 1942. The last of the line—*Talybont*—did not enter the water until February 1943, which was, in fact, later than the two Type IV vessels.

The Type IIIs showed several marked differences from the earlier ships. The twin 4 inch in 'A' position remained, but the bridge superstructure was again changed. The tripod foremast rose parallel to a quite distinctively upright funnel, whose sloping top gave it a faintly foreign appearance. This upright aspect allowed extra space between the funnel and the pom-pom gun-deck which was taken up by a small guncrew shelter.

On the quarter deck, 'Y' mounting was suppressed and all the after superstructure units were moved back towards the stern to re-create space for a twin torpedo tube mounting amidships. (Actually, it was a quad with the outer tubes removed.)

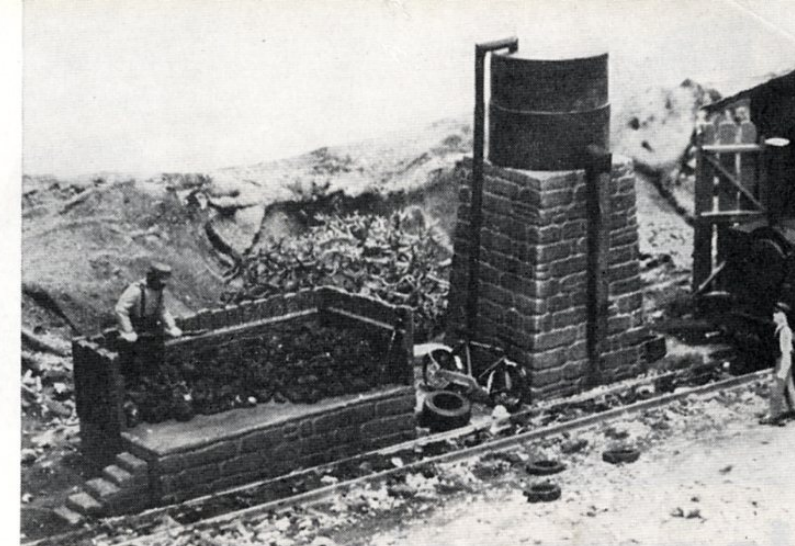
This might seem a rather odd decision but its addition did give the ships a potential against major surface targets which they had previously lacked.

Continued on page 263

SIMPLE SCENIC STRUCTURES

Attractive but easy buildings suitable for any model locomotive depot

By Michael Andress



THESE two small structures are real quickies; even a beginner could build them both in a single evening, and they will be useful additions to any 009 narrow gauge layout. By enlarging them a little they will also do for a small standard gauge branch line. Neither model is of any particular prototype but both are typical of Welsh narrow gauge railway structures. I built these models for two reasons; I needed them for my planned 009 layout but I also wanted to try out the new Slater's stone course embossed Plastikard. I found it to be very effective, giving a very similar appearance to that obtained by applying individual stones of thin plastic card but with very much less time and effort needed. If you would like to build one or both of these models, construction is as follows:

The Coaling Stage: Cut front, back, and sides of the base from 60 thou thick plastic card to the full-size patterns shown in Fig 1. Then cement these parts together with the sides fitting between the front and back, and add a top of 20 thou thick plastic card. Add facing pieces of the embossed material to the front, back and sides, taking care to match up the courses at the corners.

Fill any gaps with body putty and when this has set firmly use a needle file to make the grooves between the courses continue around the corners. The steps

are built up from five layers of 60 thou thick plastic card; one layer for each step. Each piece is 6 mm wide. The bottom layer is 14 mm long, the next about 2½ mm shorter and so on. The size of each step can be slightly different as a little irregularity will add realism. Cement the five layers together and fix to the base in the position shown in the photo. At this stage I painted the whole structure so far built with matt grey paint.

The wooden fence around the stage is cut from parts of the Playcraft Coal Station kit (B334). The top 13 mm of these parts is cut off and used. After painting with matt brown/black mixture, the fencing is cemented in place. I had these parts left over after using the crane from this kit for another conversion; if you prefer you can build up this fence from plastic card. I weathered the coaling stage by dusting on black and white powder poster paint and then brushing most of it off, leaving just a trace. The coal is imitation coal from the Playcraft kit.

The Water Tower: The base is again built up from plastic card covered with the stone course embossed Plastikard. Cut the front, back and sides from 60 thou thick plastic card to the full size patterns shown in Fig 2. Cement these parts together and fit a top of 20 thou

The completed structures on Michael Andress's layout. The very effective 'Victorian' engineman on the coaling stage is converted from a Civil War gunner.

thick plastic card. Then face the front, back and sides with the stone course embossed Plastikard, fill in any gaps with body putty, and touch up the grooves at the corners with a needle file.

For the basis of the tank I used a 19 mm length of plastic tube of about 19 mm outside diameter. If you haven't anything of this size you can use thinner material and roll paper or thin plastic card around it to bring it up to size. Then cut two strips of 10 thou thick plastic card long enough to wrap around this with a little to spare, one 19 mm wide and the other 10 mm wide.

Make a row of rivet heads along the upper edge of the wider strip and along both upper and lower edges of the narrower strip by pressing with a needle or a compass point on the rear surface. To keep them in a neat line use a rule to act as a guide and make the impressions at regular intervals. The pressure needed is sufficient to raise a small dome on the reverse side but not so much that you make a hole through the plastic. Experiment on a piece of scrap first if you have not used this method before and try to keep the pressure equal for each rivet. Now fit the wider strip around the basis of the tank, trimming it to length and then fix the narrower strip around over the lower part of the wider strip. Then fit a top of 20 thou thick plastic card.

At this stage paint the base with matt grey and the tank with matt black. The tank can then be fixed to the base. The inflow pipe is made from a length of 1.5 mm diameter wooden dowel or plastic rod. Cuts are made at 45 degrees for the two joins needed. Paint matt black and fit to the tank. The outlet pipe is made from two pieces of used biro refill tube fitted together and fitted to the tank; the canvas tube is represented by a newspaper painted with a thin wash of grey paint and rolled to form a tube. Weathering is carried out as described for the coaling stage.

Fig. 1 (left)

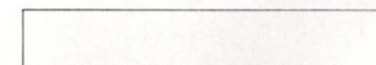
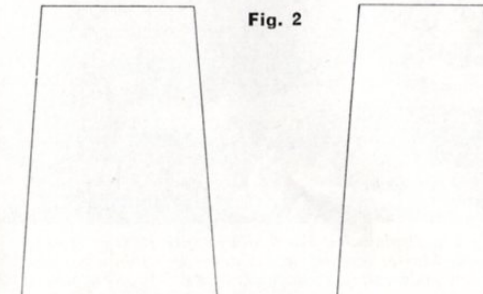
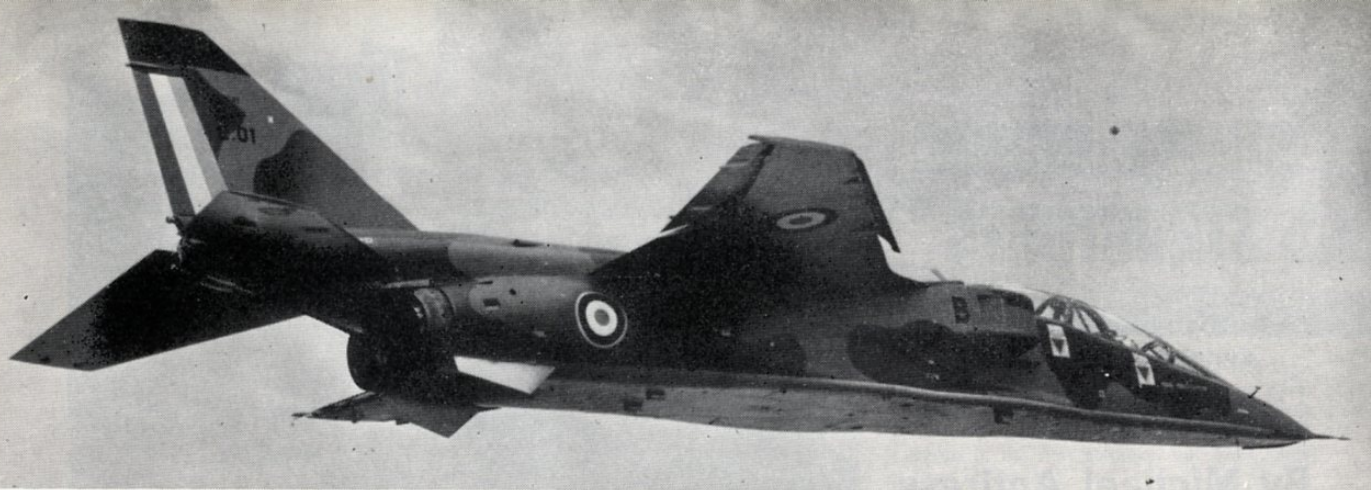


Fig. 2



Drawings given here are scaled full-size for 009 narrow gauge layouts, as shown modelled in the picture above. For standard gauge layouts double all dimensions given in the drawing. Similarly make the water tank approximately twice the size given in the text.



Jaguar colours

Details, colour schemes, and notes on the Airfix model

BY RICHARD E. GARDNER

THIS Anglo-French aircraft is one of the few politically inspired projects to have actually reached full production and is due to eventually equip about eight squadrons of RAF Air Support Command. Although originally ordered as a replacement for the Gnat and Hunter in RAF Training Command, it has become too sophisticated and expensive for this role, and is now to become the standard medium range close-support ground-attack RAF fighter in Britain and Germany. About 160 Jaguar S (strike) versions are on order, together with 40 two-seat Jaguar Bs which will be armed operational trainers. Each Jaguar squadron will receive several two-seaters.

Capable of taking off from short airstrips, the Jaguar can carry 10,000 lb of stores on five weapons stations. Weapons include Martel ASMs, Sidewinder AAMs, HE bombs, napalm tanks and rocket pods. Twin, triple, or multiple ejector racks can be fitted to enable a very flexible weapon load to be carried. Typical armament might include two internal ADEN 30 mm cannon, two Sidewinders, one external fuel tank, four Matra pods and four 1,000 lb bombs.

Jaguar is not a very pretty aircraft and the Naval version is probably the ugliest of them all! With an extendable nosewheel similar to the Phantom FG1, the Maritime Jaguar has a strengthened undercarriage to absorb the extra shock of deck-landings, and the twin-main wheels have been replaced with new single wheels of large diameter. In service, the French Navy will operate Jaguar Ms in place of the Etendard fighter-bomber. It will also supplement Aeronavale Crusaders in the interceptor role from 1972. In Britain, the Jaguar OCU will form at RNAS Brawdy in 1972. The station will by then be transferred to the RAF.

Jaguar is a powerful, cost-effective aircraft, and as the date of introduction into service draws nearer, it will become of increasing interest to modellers.

The Airfix Jaguar

The paint scheme with the Airfix kit applies to the prototype and the drawing here should be used if a production machine is to be modelled. All colours are gloss and roundels and serials should be taken from the 'spares box' or from the Almarks or Dri-dec range.

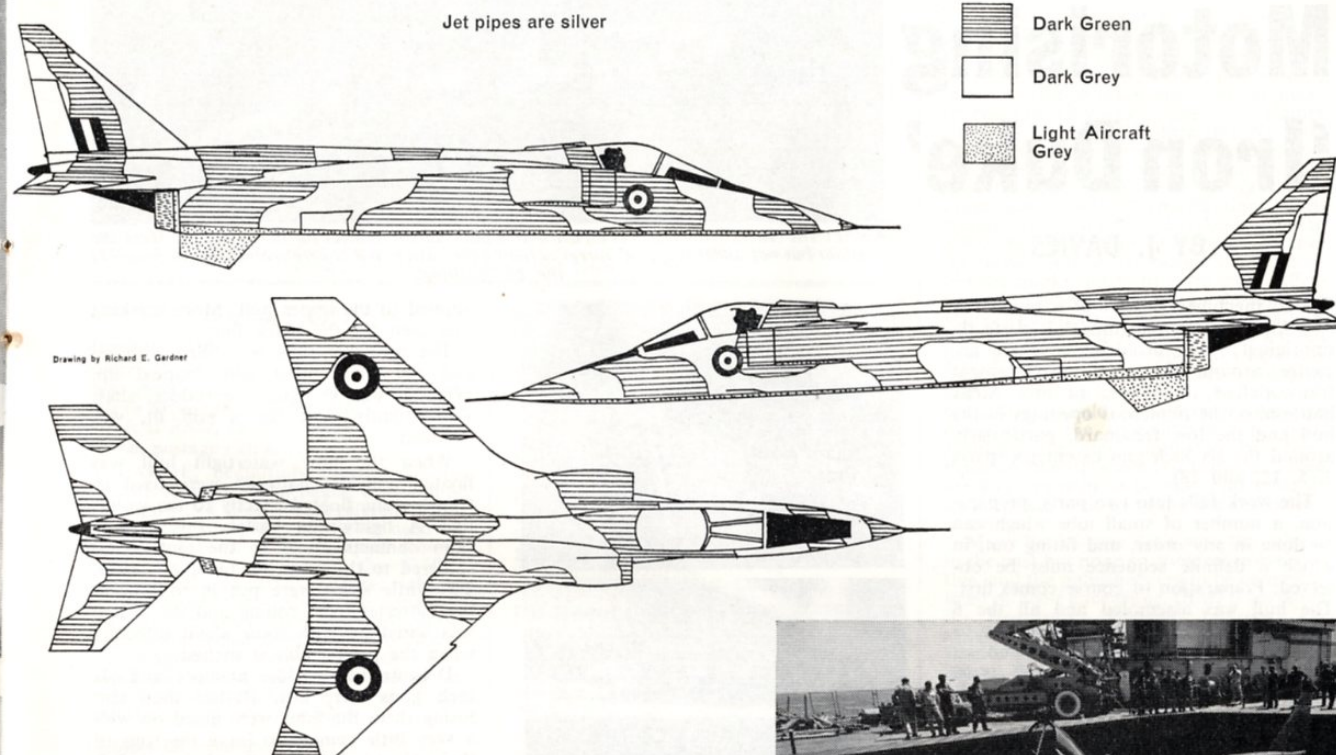
The airbrakes need to be 'perforated' and new rear-fuselage strakes must be added if the model is to conform to production standards. Additional information on Jaguar can be obtained from the October 29, 1970, edition of *Flight International*, which included a highly detailed article.



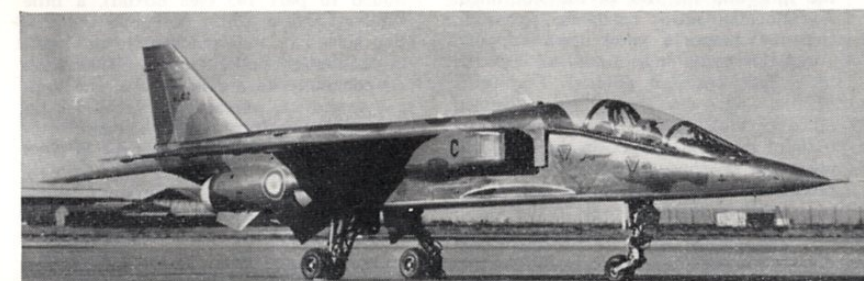
Above: The French Air Force Jaguar A with external tanks and 500 lb bombs. Note matt paint finish. Upper surfaces are dark grey and green and under-surfaces are silver. Note the taxiing lights on the nose-wheel door.



Above: Jaguar M.05 as displayed at Farnborough with 1000 lb bombs, Matra Rocket Pods, Martel missiles and Sidewinders. Note camera beneath nose and new undercarriage. Badge is of RAE Bedford, where catapult trials were undertaken in 1970. Right: Tail of M.05.



Heading picture: The prototype two-seat advanced trainer the Jaguar E.01. Note rear strakes and leading edge slats. Upper left: S.07, the second Jaguar prototype built to RAF requirements, carrying four 1,170 lb retarded bombs (two on each inner wing pylon), two Matra type 155 rocket launchers each containing 18 SNEB rockets on the outer pylons, and a 264 gallon fuel tank on the underfuselage pylon. This represents a load of about 1,000 lb less than the maximum weapon load of 10,000 lb which the Jaguar can carry. Two 30 mm cannon are mounted in the fuselage. Right: Jaguar prototype M.05, the first single seat tactical support aircraft for the French Navy. The naval version of Jaguar will replace the Etendard at present in service. It offers great flexibility of use and is able to operate from short airstrips as well as aircraft carriers.



Left: The second Jaguar E two-seat trainer in French Air Force camouflage. Sharply sloping canopy gives the rear crew member excellent visibility. Note lack of rudder stripes and different ejector seat markings compared with E.01 shown opposite. Below: RAF Strike Jaguar XW560. Note camouflage on this aircraft continues under air intakes. Two 264 gallon fuel tanks are suspended from the wing pylons. Note the inclined-down attitude of the tanks.



Motorising 'Iron Duke'

BY J. DAVIES

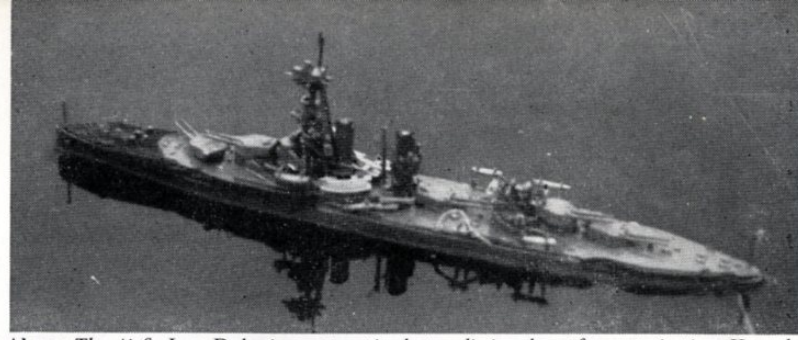
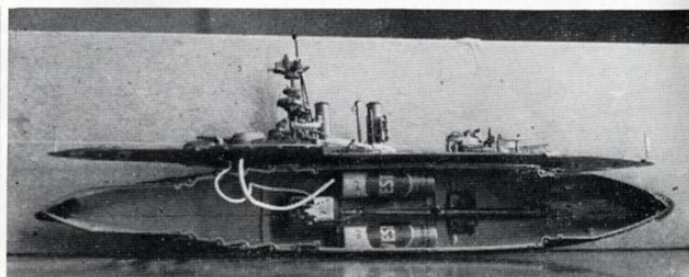
THE machinery layout of a motorized Airfix Iron Duke model is perfectly unoriginal; such problems as there are centre around the small displacement (the smallest, I believe, of any Airfix battleship), the numerous openings in the hull and the low freeboard, particularly around the six inch gun casemates (parts 2, 5, 12, and 18).

The work falls into two parts, preparation, a number of small jobs which can be done in any order, and fitting out, in which a definite sequence must be observed. Preparation of course comes first. The hull was assembled and all the 6 inch casemates were glued to it, not to the deck as in the instructions, and all the hawseholes were blanked off from behind. Care was taken to make all these joints watertight. While they were setting, the metal base of the electric motor, an Orbit 005, was unscrewed and replaced with plastic card which sticks well to the hull. A crude switch was constructed under 'A' turret by gluing one contact to the deck and heat sealing a wiper to the pivot of the turret. When the turret is put fore and aft the switch makes the circuit.

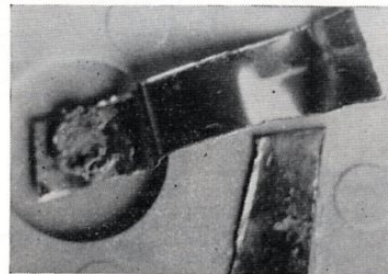
The propeller I bought was far too large and was therefore sawn off and replaced as follows; a pair of dividers was used to scribe a circle of 3/16 inch radius on an old tin lid, then the centre point was pushed through. The resulting disc with a central hole was cut out and three slots cut, not reaching the centre, to divide it into blades. It was then soldered to the shaft and the blades twisted to the correct angle. When the hull had set the skeg aft was sawn off, the resulting slot cleaned up and the nearby locating points filled.

When everything was dry, fitting out

Below, left: The model slowly under way—note 'A' turret fore-and-aft—with ripples of the wash just visible. On right is a tether line attached to the model for 'steaming' trials. Below, right: A view of the complete motorisation scheme, with wires from the switch, the Orbit motor (available from large model shops), batteries and shaft.



Above: The Airfix Iron Duke is an attractive but realistic subject for motorisation. Here she is afloat but not under way. 'A' turret actuates the switch and is here trained to starboard in the 'off' position.



Top: A close view of the simple switch under 'A' turret. The wiper is heat-sealed to the turret pivot which is seen, left, under the barrette moulding. Above: Close view of the simple tin propeller in its shaft, all supported by a new skeg.

began. The propeller assembly and motor were installed, aligned, tested and glued in. The shaft was then withdrawn from the tube and the rest of the slot filled. A rudder tube was next; the sternwalk (part 38) makes a good upper support.

As the next stage involved oil the lower hull was now painted. Two coats of matt red were applied and stippled all over with greens and browns. The hulls of the Grand Fleet, in the water for years at a time, must have become heavily fouled; anyway bare matt red is too garish on a small model in the water. Next day it was masked off and the grey

applied to the upper hull. More masking was used for the black line.

The propeller tube was filled with oil and the shaft fitted and coupled up. When it was in place the rudder, shaft very slightly bent for a stiff fit, was installed.

When the now watertight hull was floated and the batteries were used to trim her she floated exactly to the water-line. A lightweight battery box, merely shim contacts glued to the motor and soldered to the propeller tube, was built. Two little stops were put in to prevent the batteries from rolling and the switch was wired up with some slight difficulty when the plastic almost melted.

Delicate fittings like anchors and six inch guns were last. Rather than risk losing them the guns were glued on with a very little cement to leave the tops of their pivots clean for the deck to click on to. In 1913 it was found that the casemates aft were too close to the water-line to enable the guns to be worked in the slightest seaway so they were plated in and the guns moved to the fore superstructure, a deck above the others. The kit has them in both positions so one pair should be omitted.

The superstructure was assembled normally except for a WT spreader added to part 145 (see boxlid), a little rigging, and a white ensign added aft. She goes very well and despite the small motor and propeller she is a bit too fast. As the batteries are in parallel the voltage cannot be reduced and I can see no way of slowing her down. The low freeboard is an ever present danger in deep water which is the reason for the ugly tether line in the photograph. In future I shall stick to nice shallow ponds where such a monstrosity will not be needed.

BOOKS for modellers

Unless otherwise stated, books reviewed are normally available from your local bookshop or from hobby shops which sell books for enthusiasts, including the mail order stockists advertising in this magazine. As a last resort they can be obtained from the publishers whose addresses are given when known. In all cases of mail order, however, suitable postage should be added to the selling prices quoted.

AVIATION

Republic F-105

Robert D. Archer.

Aero Publishers Inc, California, and available in Britain from BMW Models Ltd, 329 Haydens Road, London SW19. 37s 6d, postage extra.

A LARGE, beautifully illustrated book with copious colour pages, this volume will supply just about all the references that the average modeller would ever need for making up F-105 models. Apart from a highly detailed account of the F-105's development and service history, right up to the present time, there are squadron histories, cut-away drawings, scale drawings, colour scheme diagrams, ordnance load diagrams, colour scheme drawings, colour pictures, serial listings, and so on. In fact, no aspect of the F-105 is left unrecorded in this first-rate book.

Fighters Between the Wars. Bombers Between the Wars.

Kenneth Munson.

Blandford Press Ltd, 167 High Holborn, London WC1. 20s each.

TWO more in a well-known series, these little volumes each have 96 colour pages with a good selection of the famous military aircraft of the 1919-1939 era. These are top value for money and a good source of colour scheme ideas for modelers. The usual historical text is included.

British Gliders.

Edited by P. H. Butler.

Merseyside Society of Aviation Enthusiasts. 7s.

ALTHOUGH non-professionals at publishing, the Merseyside Society of Aviation Enthusiasts have the knack of bringing before the public a list of titles which no one else seems to have thought about. Following their very successful *Wrecks and Relics* and the comprehensive *United States Air Force Serials*, they have now tackled another subject which, up to now, has not been catalogued in any way.

If you asked the average enthusiast what he knew about gliders he would more than likely give you a pretty blank stare and mutter something about there not being any interest in the subject. He may be right but wait till you have seen *British Gliders*.

The editor has wisely borne in mind the ignorance of the enthusiast and accordingly has 'done something simple'. Starting with a chapter on how gliders are registered, he has then compiled a complete list of gliders on the BGA register since 1930. Not content with that, the book also contains details of motor gliders with normal British G-A... registrations, military gliders, the Services' gliding clubs, gliding sites, ATC schools and a list of all active organisations

dealing with the subject in the UK. Finally, all gliders active in the country at the present time are catalogued and their dimensions and operational data listed. The whole work is backed up by six pages of excellent pictures.

For a small society with very limited funds, Merseyside have in our opinion brought off another scoop.

We can do no more than recommend this book most highly. To obtain a copy write to Mr Bryan Workman, 11 Leybourne Grove, Gateacre Park, Liverpool L25 4SS. The price for overseas readers is 9s including postage.

Die Deutsche Luftwaffe, 1939-45.

Adolf Galland, Karl Ries, and R. Ahnert. Podzun Verlag, Dornheim, and available from the sole distributors (outside USA) W. E. Hersant Ltd, 228 Archway Road, London N6.

94s 6d, post paid.

THIS book in more than 260 big pages gives a copious pictorial history of its subject, good in many parts but unexceptional in others. Very many official German pictures are used which will be unfamiliar to British readers. The text is in German and English throughout which greatly increases its value to the British reader, of course. The rarer pictures are of interest—Rommel's command car (a captured British AEC ACV) for instance, paratroop and flakartillery operations and scenes 'behind the lines' on German airfields. The pictures which illustrate the opposition tend to be either hackneyed or propaganda 'fake' shots, however, many of which will be familiar to readers with longer memories of wartime publications. The pictures of this nature are in the minority, however, and as a pictorial record this book is far more interesting, we found, than other recent pictorial histories on the same theme published in Britain and America. There is a brief chronology of events, but the text is not the strongpoint of this book.

Camouflage and Markings: Spitfire, Hurricane, Mustang, Typhoon/Tempest, Gladiator/Gauntlet/Fury.

Ducimus Books Ltd, 283 Lonsdale Road, London SW13. 6s each.

THIS is a new series of publications entirely devoted to the camouflage and markings of aircraft during and before World War 2.

Containing 24 pages the first issue, for example, devotes itself to that well chronicled, but nevertheless still fascinating, aircraft, the Spitfire, and the copy leaves out all reference to historical facts Concentrating entirely on the paint schemes employed by the RAF in Europe until the end of the war it gives a comprehensive coverage of the subject and

covers the many diverse combinations of green, dark earth, medium sea grey and the like which adorned Spitfires of the time. We could find only one small mistake in a book which takes some time to digest thoroughly. This was on one of the picture captions where a Spitfire of No 602 Squadron was incorrectly allotted to No 603. Elsewhere the book contains many line, side and plan views giving colour areas and details of specifications. Two colour pages are included one showing a five-view illustration of a Spitfire Vb and the other perspective views of different Spitfire marks illustrating the main differences in camouflage schemes through the years. The approach to these illustrations has been done with intelligence. How often have colour diagrams appeared where it is difficult to distinguish between light grey and silver? This book details exactly what the colour should be and even gives the dates when the scheme was first used. Similarly the right approach has been made to photographic illustrations. These are large enough to be read and serve as an adequate back-up to the line and colour drawings.

Many books have dealt with the subject in the past but none so comprehensively as this, and the publishers are to be congratulated on their endeavour. Other titles cover the Hurricane, Mustang, Tempest, Typhoon, Gauntlet, Gladiator and Fury in similar style. The Bulldog, Whirlwind fighter, Havoc, Meteor and Defiant are to come. In some cases several aircraft are dealt with in the same book. *Camouflage and Markings* books are available from most large model shops including Modeltoys of Portsmouth who supplied our review copies.

Racing Planes and Air Races.

Reed Kinert.

Aero Publishers, and available outside USA from W. E. Hersant Ltd, 228 Archway Road, London N6.

25s post paid.

ANOTHER in the annuals now put out by this publisher detailing the results, aircraft and people taking part in the previous year's US national air races. The book has many photographs and a number of three-view drawings, none to a recognised scale, of the aircraft taking part. Its most useful item deals with the breaking of the absolute world air speed record for piston engined aircraft by Darryl Greenamyer in a souped-up Bearcat on August 16, 1969. The speed was 483.041 mph over a three kilometre course.

British Fighters of World War 2, Volume 1. Francis K. Mason.

German Fighters of World War 2, Volume 2. Martin Windrow.

Hylton Lacy Ltd, Coburg House, Sheet Street, Windsor, Berks. 35s each.

THESE are the latest two issues in the growing range of books covering famous aircraft, put out by the publishers responsible for Profiles. Each book contains 16 pages of colour art within its 64 pages with aircraft drawings in the usual Profile style. There are pictures on every page, beautifully reproduced, and the standard throughout is high, even though the aircraft covered are all well-known types which have been covered before in the Profile range. The British volume in this case has the edge as far as artwork goes.

Continued on page 263

Making a Mongol

Mig 21 Trainer conversion using Airmodel parts, and specially suitable for beginners

DESCRIBED BY ALAN W. HALL

ONE of the neatest of recent kits produced by Airfix is the Russian MiG-21 Fishbed. This fighter has been exported to most Communist countries and a few more besides. It is in quantity service with Arab air forces, for example, and its two-seat advanced trainer version, known as Mongol in the West, is the standard Russian trainer aircraft after students have graduated from the L-29 Delfin.

In view of several requests from readers for a Russian aircraft conversion and the advent of the recently released Airmodel canopy for the Mongol, this seems an ideal time to tackle the model.

Airmodel's series of canopies are a boon to the modeller who through force of circumstances either has not the time or the ability to make his own moulded canopies. Selling at only 3s for a set of three (see 'New Kits and Models' in this issue), they are well made and although moulded in PVC plastic, present no difficulty to the enthusiast with a moderate amount of experience.

I have adapted Airmodel's offering to suit my own convenience in making the conversion as I preferred the use of balsa wood for the dorsal spine rather than use the PVC as supplied.

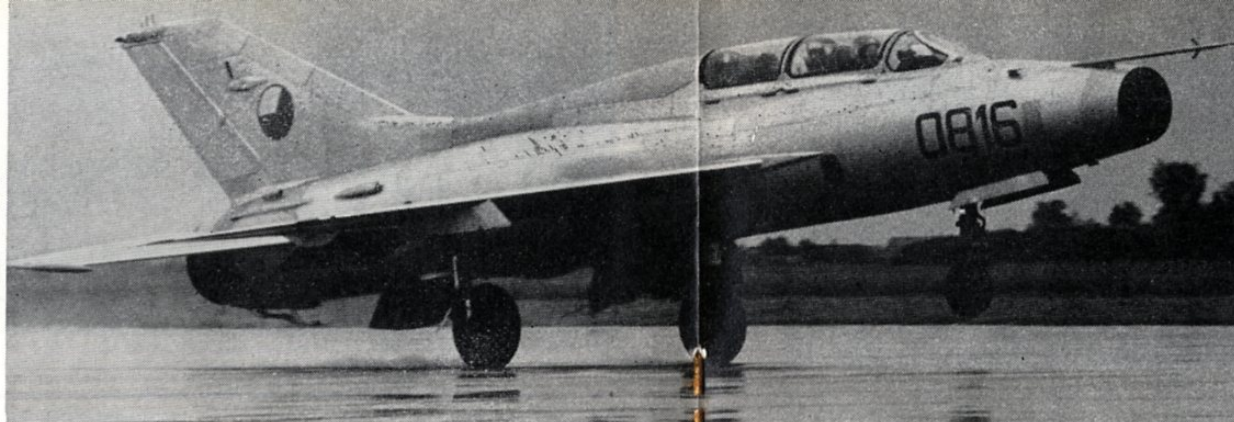
Getting accurate details was, however, a different matter, a problem with working on Russian aircraft models. I found most of the reference I needed in *Jane's All the World's Aircraft*, some from the side view offered with the instruction sheet in the Airmodel canopy and the rest in William Green's *Observer's Book of Aircraft* for 1968. Most of the illustrations show Czech aircraft but other publications supplied photos of Mongols in Russian service and these were used to provide the basic information for detailing the finish on my own product.

STAGE 1 After having wedged a suitably shaped piece of lead into the nose of one of the fuselage halves with Plasticine I stuck the two parts together and left them to dry. The wings were similarly treated. The nose cone and jet orifice were added according to kit instructions and the locating slot for the long nose probe filled in with plastic putty and left to set.

STAGE 2 When dry, a start can be made in the preparation of the fuselage for its second tandem seat. A vertical cut with a fine toothed saw is firstly made in the upper fuselage spine just forward of the fin and rudder and the whole of this section removed by cutting it away with a knife and sandpapering a flat surface along the top of the fuselage. The area of the rear cockpit is then marked out and, by using a small power drill, holes were made all round the outside of this area so that an oblong section is removed entirely from the fuselage. The edges of this are filed smooth and a second seat made from plastic card (using the kit seat as a pattern) is positioned. Alternatively you may have a suitable seat in your spares box. I found that the new seat needed a piece of thick sprue attached to its under-



The fuselage and wings are assembled and a cut is made in the fuselage spine and a section removed for the addition of the new canopy. A piece of balsa is about to be stuck in position to cover the new fuselage shape.



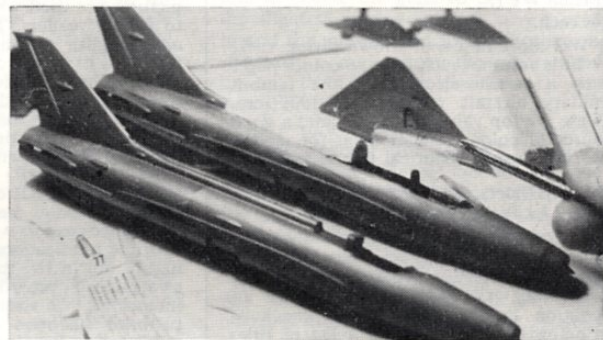
The two-seat trainer version of the MiG-21 known by the NATO code-name of Mongol, seen here in Czech markings as featured in the scale drawing.

side so that it would reach the bottom of the cockpit and level up with the front seat. To complete the operation the cockpit inside and the seats are given a coat of matt black paint.

STAGE 3 I then cut the Mongol canopy from the PVC sheet on which it is moulded but instead of using it as supplied, I cut off the rear part corresponding to the rear of the glazed portion. Airmodel advise that the rear fuselage should be built up over the canopy using plastic putty but I preferred to use balsa wood for this section. A piece of this material 2 1/2 ins long was therefore roughly shaped and attached to the top of the fuselage along the flat area already prepared. The length of the balsa plug was slightly oversize to allow for any mistakes during carving.

STAGE 4 After allowing the balsa plug 24 hours to dry out I carved the rear fuselage to shape comparing it throughout with the canopy. When the fit was exact I covered the whole area with clear dope and talcum powder mixture to fill the grain and rubbed this down with very fine sandpaper. Two applications of filler were necessary, the second being a thinner solution than the first. Earlier I had removed the front of the cockpit which produced a few small problems in getting it to fit the shape over the front cockpit sill. Once this was done I was able to cut the PVC plastic more easily and I advise others trying to make this conversion to do the same. If both sides of the saw cut are not touched the two pieces will join together again without difficulty and the canopy lines will cover the join. The original front half of the Fishbed kit canopy could be used if preferred as both the fighter and trainer are similar at this point.

Below: Testing the canopy for fit after the new spine area is completed. The Airmodel part features a spine for those who prefer it moulded. In foreground is an unmodified fuselage.



Below: The canopy supplied by Airmodel is modified to fit. Note that contact adhesive is used to fix canopy in position. Wings have meanwhile been added; details are completed before painting. The nose-wheel requires some strengthening before it can be made strong enough to stand the added weight provided in the nose to allow the model to stand on its undercarriage.



STAGE 5 Before cementing the canopy in place I finished part of the fuselage surgery by removing the twin blisters below the cockpit which house the 30 mm cannon in the fighter version. These came away easily with a sharp knife and the area around was sandpapered smooth. Joint lines on the fuselage were also given their final polish at this stage and by drilling a locating hole on the upper nose a position was provided for the nose probe. With the structural alterations complete apart from trimming a small part away from the rear of the under fuselage spine, the canopy was finally stuck down with Humbrol contact adhesive and the wings and tailplane added.

STAGE 6 Another 24 hour wait ensured that all components had attached themselves in the right place firmly before I attended to the hair line gaps between the wings and fuselage and also added other details such as the undercarriage, drop tank and wing missile pylons. The main wheels were not attached at this stage though they were painted and left aside to dry. Great care must be taken with the fixing of the model's nose wheel as an inherent fault in this kit makes this component very weak. I found that it had to be supported by pieces of plastic let

into the nose wheel undercarriage well before it had the strength to hold up the model on its undercarriage.

STAGE 7 With all parts in position and cleaned up before painting I added a coat of Magic Masker to the canopy to avoid this being covered in silver paint. Magic Masker is an American product which can be added to any part of a model and removed after painting by simply peeling it off. In this case I used a paint spray to give me a top quality metallic surface and the masking agent did its job well. Several of the leading shops in this country are, I understand, about to start stocking the product. Otherwise it can be obtained in Germany or direct from the States. Alternatively mask off the canopy with strips of ordinary Sellotape.

PAINTING AND MARKINGS The delight of most Russian aircraft (and also part of the unattractiveness to the modeller) is the fact that they are natural metal overall having the Russian star in six positions and a nose code in black. The Letraset (Dri-dec) sheet No M28 provided the national insignia and I found the black codes on other rub-down sheets from the same company. To add a little more interest to the surface detail I painted several areas, particularly around the nose cone and top fuselage spine in medium sea grey by referring to the photograph I had and also blackened up the jet orifice area with a mixture of matt black, silver and bronze. The nose cone itself was painted matt black and dark sea grey was applied to the undercarriage legs and wheel hubs. Details of a Czechoslovak Mongol are given in the photograph with this article and in the drawings. Here the kit markings can be used apart from the nose code.

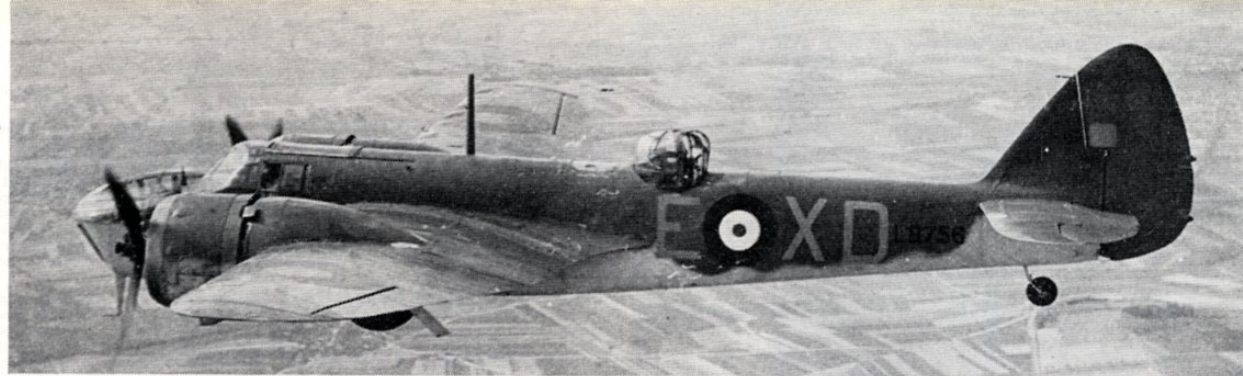
The small picture on this page (below, left) shows Magic Masker in use. Immediately before painting the cockpit canopy was covered with a coat of Magic Masker to prevent the paint going on the transparency. Afterwards it is stripped off. See the September 1970 issue for more details.

Aircraft silver overall

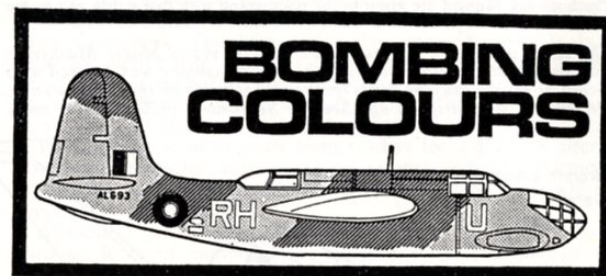
Jet pipe and ventral fin bronze

Drawings by Richard E. Gardner

0 Feet 10
1:72 Scale



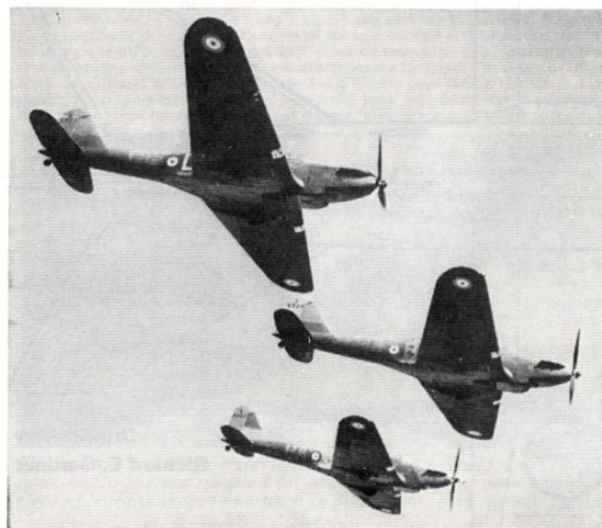
Blenheim IV (long range) L8756:XD-E of 139 Sqn over France early in 1940. She served for a long time with 139 Sqn, surviving the horror in France in 1940. Later she was used by 9 AOS and 12(Pilot) AFU and soldiered on to 1944. Here she wears the reverse scheme to those in the drawings, and has revised under surface colouring (Imperial War Museum).



Part 22: The Phoney War

OVER 47,000 men of Bomber Command, gifted, capable people of high calibre, were killed in action during the second world war. Their value to our nation in peace cannot ever be overestimated. Before *Bombing Colours* relates the story of the terrible years it is an apt moment to remember those fallen. The total represented one eighth of the total casualties, service and civilian, incurred by the nation, and half the loss of the Royal Air Force. Added to this nearly another 5,000 were seriously wounded. Additionally there was a sizeable number killed and injured during training flights; the total killed or injured was approaching 60,000—a frightening figure. Young or old, we should never forget the appalling sacrifice and horror behind those ghastly days.

The opening months of the second world war are usually referred to as the 'phoney war'. For Bomber Command there was nothing phoney about it. From the moment Neville Chamberlain made his grim broadcast Bomber Command was virtually in action. Full



mobilisation was publicly proclaimed on September 1, 1939, and squadrons began to move to war stations and aircraft to receive their wartime squadron codes. Fearing all-out attack, and reprisals for any operations carried out, many squadrons scattered westwards, in part to civilian airfields to very elaborate plans.

On the afternoon of September 2 watchers on the South Coast witnessed a host of Fairey Battles—ten squadrons totalling 149 aircraft—heading for France. The Battle's range was too short to permit operations over Germany from England, so No. 1 Group (known now as First Echelon Advanced Air Striking Force) moved to forward bases.

Bomber Command's strength on September 3 was 55 squadrons. Additional to the Battles there were at readiness 79 Blenheims of 2 Group, 69 Wellingtons of 3 Group, 50 Whitleys of 4 Group, 81 Hampdens of 5 Group and a handful of Battles and Blenheims in 6 Training Group. It was the largest Command, but not big enough, and by September 30 operational strength had fallen to 33 squadrons as others went to France or took on training commitments.

Numerically too small for a sustained hefty offensive the Command at least had aircraft mainly superior to enemy bombers, and there was the prospect of the four-engined heavies to come. On September 1 approval had been given to two plans (1) an all-out offensive if the enemy attacked in strength and, (2) a limited offensive against the German Navy and the dropping of propaganda leaflets. No German onslaught came, and plan 2 was enacted.

Since September 1 Blenheim IV N6215 of 139 Squadron, Wyton, had been at standby to reconnoitre German ports and assess position and strength of the German fleet and sundry military targets. At noon on 3rd it set off and secured photographs. Later that day nine Wellingtons of 37 and 149 and Hampdens of 83 Squadrons searched the North Sea for warships.

The Blenheim's reconnaissance had revealed ships and it was decided to attack those off Wilhelmshaven and Brunsbuttel. Accordingly three squadrons of long-range Blenheims, Nos 107, 110 and 139, were despatched. 139 failed to locate the enemy, 110 managed to get away lightly and 107 lost four of its five machines. The weather was very bad and when the Wellingtons of 9 Squadron (including L4268 and L4275) and 149 Squadron (including L4272:0J-A) tried to bomb off Brunsbuttel conditions were atrocious and they had to face flak. They scored a possible hit but lost two of their number.

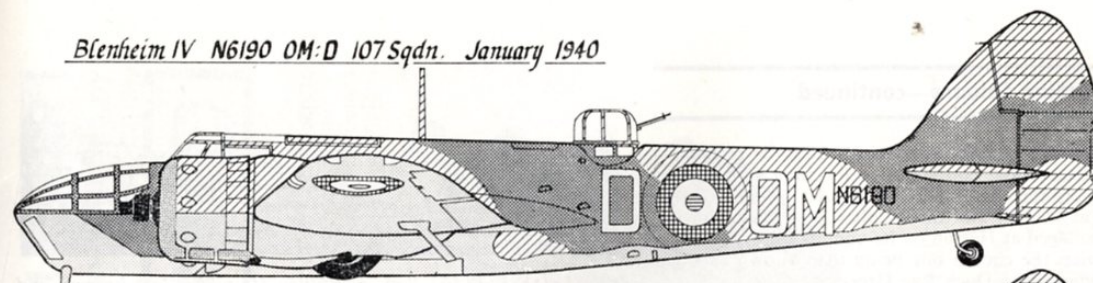
All the Wellingtons were Mk 1s, but already the Mk 1A with its superior turrets was becoming available. During September the six front line squadrons all received some 1As and very few sorties were flown by the Mk 1s.

Markings changed little at the start of the war. Instructions were given to remove under-wing serials when the code letters were changed and, unfortunately for the handful of enthusiasts of those days some aircraft had their serials entirely painted out so that a tie-up of new codes and serials indicating squadrons was not possible. Such rudder serials as remained were mostly deleted but the Battles in France continued to wear them for many months in some cases. Gone were squadron badges, too. My own recollection of the first afternoon of war was the amazing stillness and sense of

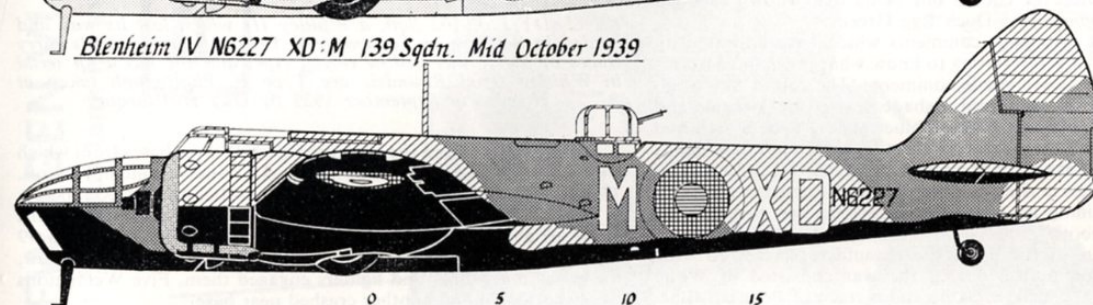
Left: Three Battles of 218 Sqn over France, possibly photographed at the start of 1940. They have under wing roundels, dark grey codes with possibly a change to a lighter grey evident, and fin serials. K9325:HA-D is the nearest with HA-B:K9324 leading and K9353:HA-J furthest away (Imperial War Museum).

AIRFIX magazine

Blenheim IV N6190 OM:D 107 Sqn. January 1940



Blenheim IV N6227 XD:M 139 Sqn. Mid October 1939



Colour key

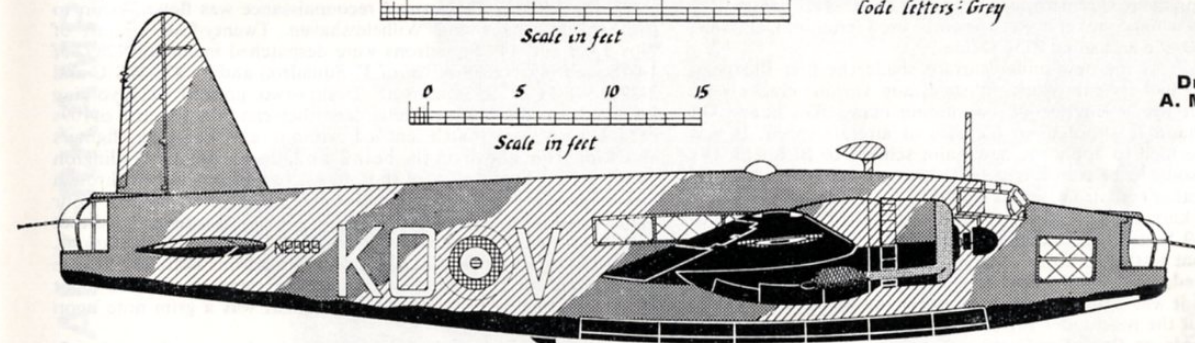
- Red
- White
- Blue
- Dark green
- Dark earth
- Duck egg green
- Black
- Bronze

Scale in feet
0 5 10 15

Code letters: Grey

Scale in feet
0 5 10 15

Drawings by
A. M. Alderson



Wellington 1A N2989 KO:V 115 Sqn. December 1939

Above: The two Blenheims show schemes in use in 1939. N6190 wears the late 1939 scheme and was recorded in the markings shown early January 1940. Squadrons codes were light grey. The machine was 'polished' and traces of the old pre-war roundel were visible. N6227 was recorded at Wyton on October 16, 1939, and also wears light grey codes. No fuel jettison pipes were in evidence, but the machine is believed to have been a long-range aircraft—perhaps not then fully modified. Again traces of pre-war roundels were in evidence. Note that in both cases the under surface colour ends in an irregular line at the 60 degree tangent point. Both have under wing roundels, probably because they were used for daylight operations. Wellington N2989 was seen at Newmarket on December 3, 1939, in the markings shown. Her codes appeared to be about 4 feet high, whereas those on the Blenheims were about 30 inches high. An interesting point about the Blenheims is that although they were alternately produced machines their camouflage pattern was similar.

foreboding on the East Anglian airfields. Nothing seemed to be moving and in my diary I only noted the passage of one Blenheim IV. On Newmarket Heath the Wellingtons of 99 Squadron already squatted, at Mildenhall 149 Squadron was dispersed—then an unusual sight—and the Blenheims and Ansons at Basingstoke were partly among the trees of Wimpole Park and still wearing their pre-war codes.

Further north it was different. Whitleys of 51 and 58 Squadrons of 4 Group were to operate that night, scattering leaflets over Hamburg, Bremen and the Ruhr and gathering useful information about night operations. They encountered storms and icing conditions, and one crashed in France. Although they had the longest endurance of the bombers the five squadrons of Whitley III/IVs were the slowest and from the start of hostilities were relegated to night operations. Mk Vs entered squadron service at a trickle, 78, 77 and 102 Squadrons having them by the end of 1939. They included N1355:KN-X (in use 10.39), N1378:DY-Q (in use 11.39) and N1380:DY-R (in use 12.39). Into mid-1940 the Tiger engine Whitleys were on operations.

No 5 Group's Hampdens, despite their poor armament, were committed to action at once and undertook daylight patrols over the North Sea searching for warships. In France the Battle squadrons took a fortnight to settle, then began daylight lone reconnaissance flights over the German lines and their hinterland. On September 20

Battle K9243 of 88 Squadron shot down a Bf 109, the first to fall to an aircraft of Bomber Command in the war.

Every effort was ordered to avoid attacking any civilian target. Now came the order to attack warships at sea using formations of armed bombers. From September 26 sizeable forces would fly over the North Sea and on 29th eleven Hampdens of 144 Squadron attempted to attack two destroyers. Off the Frisians Bf 109s swept in and soon downed five of the bombers including L4121. Their armament and close formation had failed to save them.

Already a noticeable change had come in bomber roundels. When I took myself to view the Wellingtons Mk 1/1A of 99 Squadron on Newmarket Heath on October 1, 1939, I was surprised to find them all wearing Type A red-white-blue fuselage roundels, and about half had under-wing roundels. The new side roundels had also been applied to some of 149's aircraft. Otherwise there was no change, and serials were only worn on the fuselage. The authorised date for a complete introduction of the new roundels was December 7 but my diary shows that quite a number of bombers seen in October had them.

For daylight operations black under surfaces on Blenheims penetrating high and quite deeply into Germany were deemed unsuitable. There was also dissatisfaction with the rough paintwork which reduced the aircraft's speed at a time when even a marginal

Continued on next page

Bombing Colours—continued

increase was worthwhile. A series of special shades for reconnaissance aircraft had been under consideration for some months and these were collectively then known as Sky shades. The work was being undertaken at Heston and on October 27 a Blenheim left Wyton to be camouflaged at Heston on its under surfaces in a new shade from the series, the chosen one being then known as Light Sea Green, later officially as Duck Egg Green.

In view of some erroneous comments which have appeared on the subject of 'Sky' it is interesting to know what the manufacturers responsible for the chosen shade comment: 'The colour Sky originated just prior to the war from a shade devised by Titanine and called Camotint. This was a greenish blue shade. "Type S" referred to a standard of finish. At the start of the war matt camouflage paints were very rough and as speeds of aircraft increased, it was found that significant advantages in drag could be obtained by using smoother finishes while retaining an adequately non-reflecting surface. "S" thus stood for "smooth".'

As to the colour of the paint the manufacturers record: 'the SBOAC formulation in use during the war consisted of White tinted with about 4% Yellow Oxide and a trace of Prussian Blue. The white pigment varied with the type of paint—NC paints used Zinc Oxide while Synthetic Resin paints used Titanium Dioxide, Antimony Oxide and some Zinc Oxide.'

In addition to the new under surface shade the first Blenheim thus treated had its paintwork polished, and various cracks were filled. But it was a lengthy job consuming many man hours. On the other hand it afforded an increase in aircraft speed. It was therefore decided to apply the new paint scheme to Blenheim IVs at Wyton, soon to be transferred to France, and to a few selected aircraft in other squadrons which would be fully treated to become what were known as 'polished' aircraft. By late November both 114 and 139 Squadrons had on charge specially treated machines wearing what was still known as 'Light Sea Green' under surfaces. Two uncodified specimens I noted on November 29 were L8859 and N6227. But it was February, 1940, before many Blenheims were to be seen with the new under surface colour referred to, in contemporary records, as *Duck Egg Green*.

Meanwhile the general level of operations had continued at low key. On October 1/2 three Whitelys of 10 Squadron had ventured to Berlin to bombard the city with paper. They did so in conditions of appalling cold for the Whitelys were unheated, and many were the astonishing stories that circulated about their operations. For the Wellingtons and Hampdens North Sea Sweeps were a frequent feature. There was a general need for more positive action, if only to maintain morale, and so on November 19 it was decided to attack ships close in harbour and still avoid civilian casualties. For many crews there were long standbys usually resulting in the cancellation of operations at this time.

Eventually a suitable day came, December 3, when 24 Wellingtons drawn from 38 Squadron (including HD-W: N2880), 115 Squadron (including KO-U: N2899) and 149 Squadron set out to bomb two cruisers. They met 5/10 cloud and Bf 109s engaged the bombers. LAC Copley, the rear gunner of HD-Z: N2879, destroyed one. The three turrets of each bomber, good station keeping and the use of cloud cover had, it seemed, saved the day. Only a minesweeper was, by luck, sunk.



Hampden P1320: ZN-B of 106 Sqn photographed early in 1940. It has distinctive style codes and under wing roundels. Note that it has the 'N' correctly applied—and not as a mirror image as was shown recently in one publication! ('Flight International').



K8985: DY-J of 102 Sqn, a Whitley III which lost its way and landed in Belgium on September 9, 1939. All her roundels carry traces of the former yellow ringed type, and she has a fin serial in Whitley style. Roundels are Type B. Photograph taken at Nivelles in September 1939 by Guy Distribeque.

Whitleys now began their 'security patrols' over bases from which enemy aircraft had set out to sow magnetic mines around our shores. 77 and 102 Squadrons commenced these sorties on 12 December.

Enemy warships were reported at sea on 13th. Next day Hampdens made an abortive early search and later twelve Wellingtons of 99 Squadron were despatched to Schillig Roads. Cloud was low, there was much flak, and fighters engaged them. Five Wellingtons were shot down and another crashed near base.

On the 18th another armed reconnaissance was flown, again to the Schillig Roads and Wilhelmshaven. Twenty-four aircraft of Nos 9, 37 and 149 Squadrons were despatched including N2892 of 149 Squadron, N2888-A: LF of 37 Squadron and N2873-WS: C and N2939: WS-H of 9 Squadron. Twenty-two pressed on, avoiding known flak ships. East of Heligoland they ran into a swarm of 109s of JG 1. A long battle ensued without any bombing, fighters attacking from above on the beam, a blind spot for the Wellington gunners. Ten bombers were shot down, two more ditched through loss of fuel from unprotected tanks and three forced landed. Four fighters had been destroyed. Reluctantly it had to be concluded that Wellingtons and Hampdens were unsuitable for daylight operations. Nevertheless Hampdens of 83 and 49 Squadrons searched for the *Deutschland* on 21st, but the warning was clear—it must be night operations for the heavies from now on. It was a grim note upon which to close the year.

Examples of aircraft in squadron service between September 3, 1939, and the end of December:

Fairley Battle	12 Sqn	PH-X: L4952 in use October
	88 Sqn	RH-L: L9244 in use September
	105 Sqn	GB-W: K9191 in use September
	218 Sqn	HA-J: K9353 in use September
	226 Sqn	MQ-W: K9330 in use September
Blenheim IV	21 Sqn	YH-F: L9837 in use December
	82 Sqn	UZ-O: P4852 in use October
	110 Sqn	AY-B: N6198 in use September
	114 Sqn	RT-J: N6161 in use September
	139 Sqn	XD-R: N6217 in use October
Wellington	139 Sqn	XD-R: N6227 in use December
	9 Sqn	WS-B: N2871 in use October
	38 Sqn	HD-Z: N2879 in use Sept-December
	99 Sqn	LN-J: N2887 in use October
	149 Sqn	OJ-C: L4272 in use September
Whitley	51 Sqn	MH-J: K9008 in use October
	58 Sqn	GE-G: K8969 in use September
	102 Sqn	DY-E: K8976 in use September
Hampden	44 Sqn	KM-A: L4085 in use December
	83 Sqn	OL-L: L4050 in use September
	106 Sqn	ZN-B: L4175 in use September

Michael J. F. Bowyer

MODEL ENGINEERING EXHIBITION

Diary date for enthusiasts is the annual Model Engineering Exhibition, held as usual at the Seymour Hall, London, W1 (near Edgware Road or Baker Street stations), from December 29-January 6. It covers ships, tanks, railways, aircraft, and most other subjects.

AIRFIX magazine

1/25 SCALE PANZERKAMPFWAGEN VI TIGER I

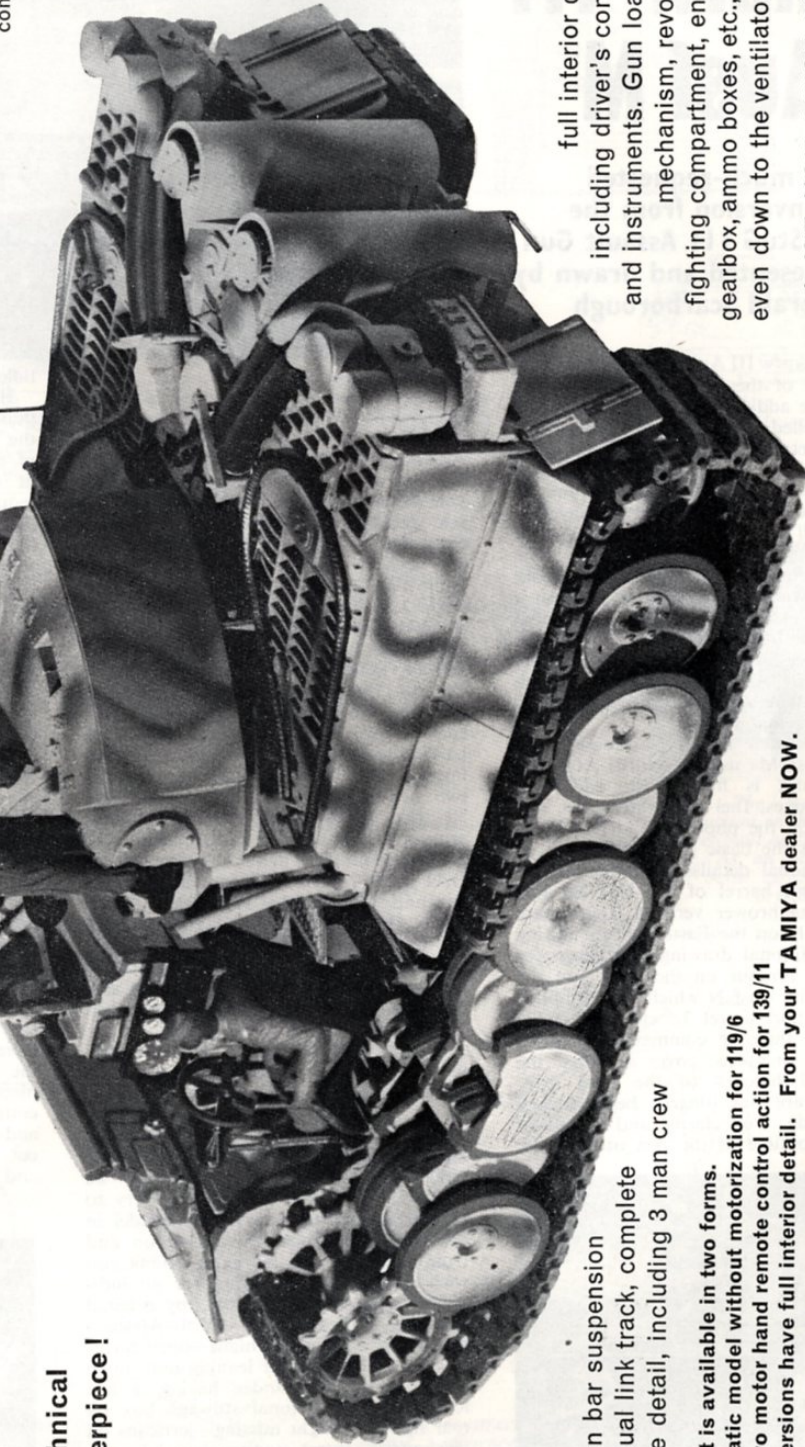
the most fabulous tank kit ever offered by



This illustration is cut away to reveal the superb interior. The real model comes complete.



a technical masterpiece!



Torsion bar suspension individual link track, complete outside detail, including 3 man crew

full interior detail including driver's controls and instruments. Gun loading mechanism, revolving fighting compartment, engine, gearbox, ammo boxes, etc., etc., even down to the ventilator fan.

This kit is available in two forms. As a static model without motorization for 119/6 or in two motor hand remote control action for 139/11 Both versions have full interior detail. From your TAMIYA dealer NOW.

Richard Kohnstam Ltd

A KIT YOU MUST BUILD
13-15a High Street, Hemel Hempstead, Hertfordshire.

Pzkw III Ausf M

A much-requested conversion from the Airfix StuG III Assault Gun kit, presented and drawn by Gerald Scarborough

THE Pzkw III Ausf M was a development of the almost identical model L with the additional spaced armour and long-barrelled 5 cm KwK 39 gun of this model. Detail differences were the addition of smoke generators fitted to each side of the turret, lights moved from the hull to the trackguards and the deletion of the hull side escape hatches to permit the carrying of extra ammunition. The most significant difference was the facility for deep wading and for this purpose a new type exhaust silencer was mounted high on the upper tail plate. Photographs and further information on this model appeared in *Airfix Magazine* in March 1969 and there are some excellent pictures featured in that article.

My particular model is representative of the Ausf Ms used in North Africa in 1942-43 and is fitted with additional stowage boxes, fuel and water cans, etc., as shown in the photographs. The drawing depicts the basic production Ausf M and additional details are given for the mantlet and barrel of the F 1 Sd Kfz 141/3 flamethrower version. These were used mainly on the Eastern Front during 1943. Additional drawings are given for the 'skirt' armour on the sides and the turret of the Ausf N which was equipped with the short barrel 7.5 cm KwK L/24 gun. Note that the commander's cupola lid was a one-piece cover and that the front hull hatches to the final drive assembly are not hinged, being locked from inside. For clarity and simplicity only the outline of the rest of the tank



has been drawn.

Construction of the model is quite straightforward as most of the work has been done by Airfix with the Stu G III Assault Gun kit. Cut up part 57 with a fine saw as marked on the sketch, as all you will need are the front plates and the rear decking and engine covers. Plug up the holes where the spare roadwheels go and remove the detail from the angled front plate, leaving only the hatch covers. Parts 3 and 54, the hull sides, now have the track cover portion cut off the top. The whole of the lower hull, parts 1-54, can be assembled (discarding parts 55, 56 and 59) as per the kit instructions 1-8. The sides with all the roadwheels, etc., in place can now be assembled to part 58, adding the front and rear decking that have been cut from part 57. Cut two new hull topsides and a top from 30 thou plastic card, also the spaced armour in front of the hull machine gun position and the driver's vision block. Drill a 3/32 inch hole for the machine gun and a cut out for the driver's vision hatch. Having made sure that everything will fit together squarely, cement the new topsides, top and front to the hull. Note the top should fit flush between the side pieces and don't forget to mark and then drill a hole for the turret pivot.

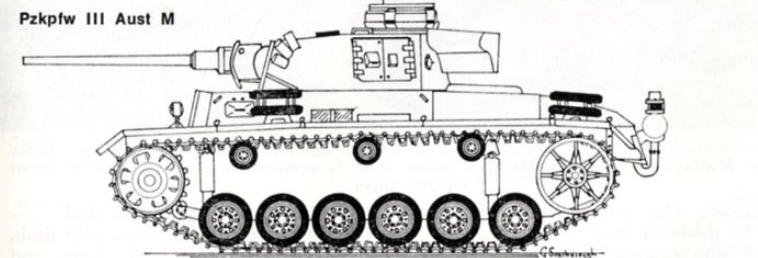
Flushed with success so far (we hope), the point has now been reached to decide whether you want a 'factory fresh' model or a battle-scarred veteran. You must decide which battle front you wish your model to represent as this will dictate the kind of additional gear that can be included, type of crew wear, etc. Try to find a few photographs of this model in the particular front you decide on and from these list out the extra points you wish to incorporate, trying for an individual look. As an example, my original notes read, 'Pzkw III—North Africa—bedding down for the night—open turret side hatch with gunner leaning out—open cupola with commander having a last look round—additional stowage box on rear hull—one light missing—jerricans on trackguard—turret stowage box lid open with crew member standing on rear deck—part track covers missing.' The last of these I did not include but instead put a

lidless box on the right front trackguard.

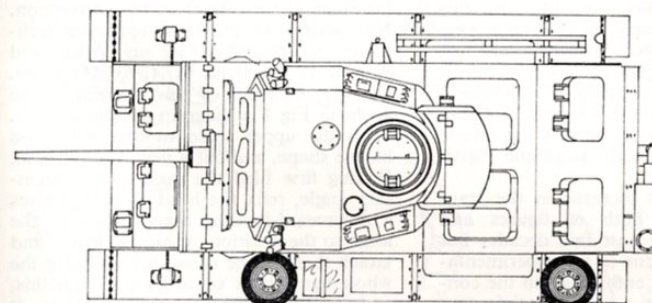
Having decided the battle front and thus fixed the camouflage scheme, paint the lower hull, wheels, etc., up to the line of the underside of the trackguards and fit the tracks. Cut out and score as required, the trackguards (or parts of them) from 30 thou plastic card, bend to the shape on the side elevation and cement in place. Add the supports from rod or stretched sprue with the ends cut off at an angle. You can now include all the other little bits, pistol ports, ventilators, stowage boxes, exhaust system, spare wheels, etc., as you may decide.

The turret is a little more difficult but start by cutting out the bottom from 20 thou plastic card but cutting 10 thou undersize at the sides and back and 20 thou undersize at the front to allow for the thickness of these parts. Drill a centre pivot hole to match up with the hole in the hull top and then add the internal supports and gussets, again allowing for the thickness of top and bottom, etc. Cut out the 20 thou turret front (this is shown more clearly on the Ausf N drawing) and cement this to the bottom, getting the angle of slope correct and then adding the top from 15 thou after scoring across and bending slightly. Be sure to get the top and bottom parallel when viewed from the rear. Cut out the front half of the sides from 10 thou and cement in place, followed by the rear sides after cutting out the hatch opening if required, and finally the curved rear. This can be cut oversize, bent to the correct curve and trimmed off top and bottom when

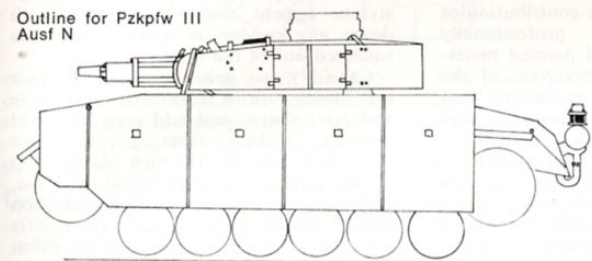
Continued on page 272



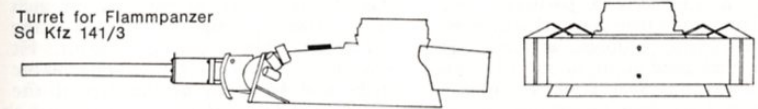
1 : 76 scale



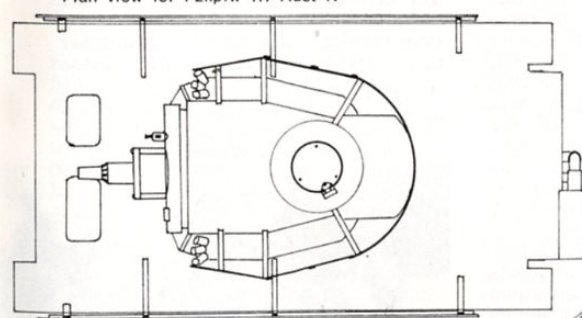
Outline for Pzkw III Ausf N



Turret for Flammpanzer Sd Kfz 141/3

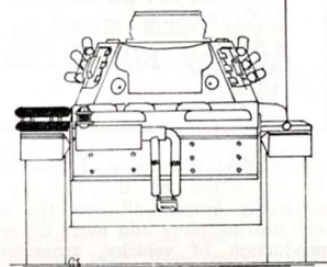
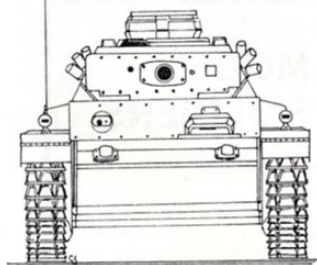


Plan view for Pzkw III Ausf N

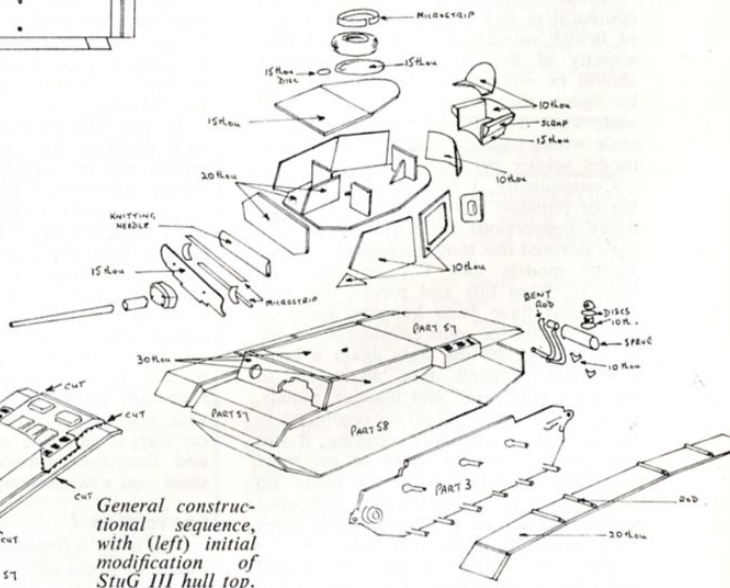


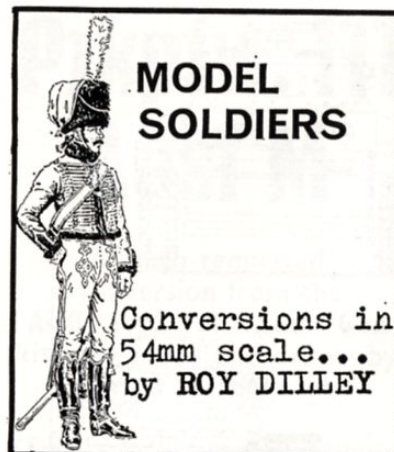
Opposite, top: Twice as large as life! The completed model with crew and detail fittings seen in extreme close up. Men are from the Afrika Korps set. Opposite: Two more views of the model showing all the detail fittings.

Previous conversion article on Pzkw III variants appeared in the May 1964 issue, now out of print



Above: The model under construction, in this case with a turret built up from styrene sheet. As an alternative a solid balsa turret could be carved.





MODEL SOLDIERS

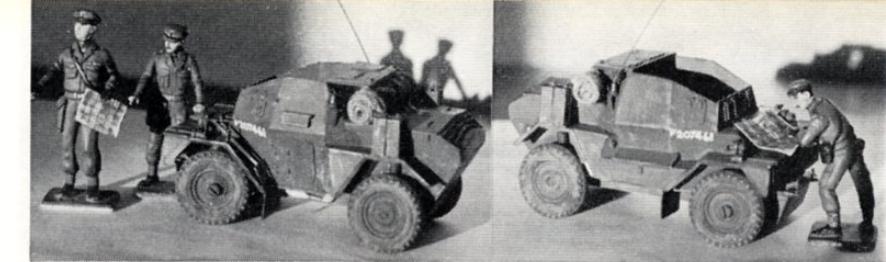
Conversions in 54mm scale... by ROY DILLEY

SEVERAL months ago I commented in an article on the way in which modelling interest all over the country was moving more and more towards the production of vehicles, armoured and otherwise, and the figures to go with them. The trend still continues, seeming even to be gaining momentum, and commercial manufacturers have not been slow to note, and act upon it. Japanese companies in particular have produced some fine kits which make up into excellent replicas of the prototypes, and some, notably Tamiya, represented in this country by their agents Richard Kohnstam Ltd, have brought out crew figures to set off the vehicles. Enthusiasts everywhere have eagerly seized the opportunity to explore the conversion possibilities of such kits and figures, and the results of their work, as displayed in meetings and competitions of the national societies (IPMS and BMSS), have delighted the eyes of all beholders.

However, probably because of the comparative lack of kits to make models of British vehicles, there is still a similar scarcity of British crew figures, and it should be emphasised that the Japanese kit figures that are available are to 1:35 scale and not the slightly larger 1:32 scale which equates with 54 mm scale in model soldier parlance.

Consequently, I have received a number of requests to deal with a few more figure conversions to British types, and have devoted this month's feature to some simple models that I have made up, literally, from bits and pieces, and odd parts that have been hanging about in my scrap box for some considerable time. At this point let me state again a basic conversion principle, that 'all is grist to the conversion mill' and plastics, metals, wood, paper, etc, can all be combined in the same figure. Broadly speaking, if you can bond it, use it! Some of my most successful models have been made up from a variety of materials, and once painted have been indistinguishable from those made all of one material.

Don't be afraid to experiment, and don't allow yourselves to be put off by



Two views of the simple British 1944-45 period officers, made mainly from Airfix Motor Racing figures. The Daimler Scout Car is scratch-built in 1:32 scale from styrene sheet.

the 'purists', who insist that a figure should be made of lead, or plastic, but never of both at once! Even substances that at first glance appear to be unlikely as model ingredients, can often be employed with startlingly good results. One of the most consistent winners of British Model Soldier Society competitions actually makes his exquisite 54 mm miniatures using ordinary household Polyfilla as a basis. Another obtains his basic figures from Isopon cast in simple Plasticine moulds.

The phenomenal increase in the standard of models, both of figures and machines, over the past two decades has been in large part due to the experimentation carried out by enthusiasts in the constant search for more satisfactory materials and techniques. Manufacturers have also assisted by their contribution of anatomically accurate, professionally sculptured, engraved, and painted miniatures. Take advantage, therefore, of the accumulated knowledge, techniques and general expertise of professional and amateur modellers alike and, in addition, give your own imagination free rein to adapt and experiment. In this way you will not only derive much more enjoyment from your efforts, but it is more than likely that you will evolve or formulate some special technique that will be of benefit to fellow enthusiasts. Incidentally, if you have a particular tip, hint, or technique that you feel would be of interest, write it down, as briefly as possible, and send it in to me c/o the Editor. Later this year I will try to get as many as I can into one special article, so that the benefits can be reaped by all our readers.

As you will see from the photographs and sketches, the conversions for this month are of varying degrees of complexity. However, I have tried to explain them as simply and briefly as possible, and once again I urge you to let your own imaginations loose, to vary and improve upon these figures. Although all the examples shown are of British types, slight modifications will enable you to depict whatever nationality you require.

When I started on this project, I wanted to have several figures in my collection which could be used together with small vehicles of the jeep or scout-car class to simulate 'command' situations and the three conversions that follow show you what I came up with.

Conversion I

This is for a British officer of motorised infantry (Coldstream Guards), leaning forward. Figure required is the Airfix

Motor Racing Mechanic, Standing.

Having cleaned off all the mould flash, remove the figure from its base, and neatly cut off the head and arms, retaining them for use later in the conversion. Now carry out the leg-lengthening technique, as described in my April and August 1970 articles in *Airfix Magazine*. For the assistance of new readers, I have given in Fig 1 a diagram of this process. Trim the upper torso to the battledress blouse shape, and cut a new waist (Fig 2). Having first filed the neck to the necessary angle, refix the head so that it gives a downward-looking aspect. Rework the arms to the positions shown in Fig 3, and attach them to the torso, before fixing the whole figure back on to its base. For this, and the previous head-fixing operation, it is best to use a good quality tube polystyrene cement, and when dry, smooth down any residue of cement that has squeezed out of the joint.

Carefully cut gaiters into the trouser legs, being sure to retain a natural ankle and boot shape, and add map and field dressing pockets from plastic sheet (Fig 4). A belt of .010 inch plastic strip 1½ mm wide is now fitted round the waist, and a pistol holster and ammunition pouch made from scrap plastic is attached to the right hip (Fig 5). From the same scrap material make a binocular-case and suspend it over the right shoulder on a narrow strap of .01 inch plastic card, securing it at the top of the left thigh with a dab of cement. Fit shoulder straps from 1 mm wide plastic strip, and blend in at the top of the sleeves (Fig 6).

Apply a blob of plastic putty to the head, and when thoroughly dry, sand it down to form a beret. Finally, make a pair of goggles from scrap plastic sheet and attach them to the beret with a thin strap running round the head. Remember that in real life this strap would be made

A typical display grouping for the three figures—a 'map conference' alongside the Dingo with the officers in a 'command' situation for a diorama scene.



AIRFIX magazine



Fig 1
Cut legs and insert 4 mm scrap before re-cementing



Fig 2
Battle-dress blouse (Officers) with waist fastening.

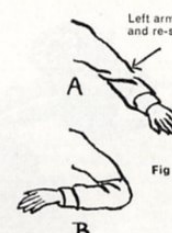


Fig 3
Right arm: cut at shoulder and swing forward (see photo).

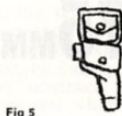


Fig 5
Pistol holster and ammunition pouch shown to 54 mm scale

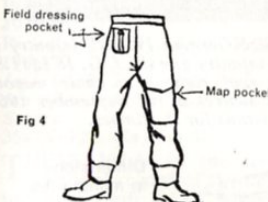


Fig 4
Battle-dress trousers tucked into gaiters and showing map and field dressing pockets.

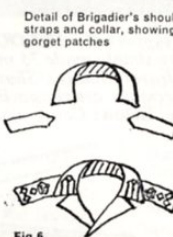


Fig 6
Detail of Brigadier's shoulder straps and collar, showing gorget patches

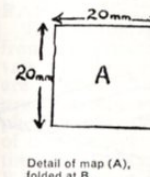


Fig 8
Detail of map (A), folded at B.



Fig 9
Left arm of SAS officer

Rank badges

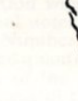


Brigadier
Lt-Col



Fig 7
Cement Airfix body to Renwall legs

Cut at elbow and re-set swung forward



Cut at elbow and re-set swung forward

of strong elastic, and would pull the cloth of the beret tight against the head. Make sure that all the necessary steps have been carried out, and the piece is ready for painting.

Conversion 2

This one represents a British officer (SAS) standing with a map. Items required: arms and torso of Airfix Motor Racing Driver, sprinting; lower body and legs of Renwall Tank Driver, standing. Rose Models metal head C1a (this can be with or without moustache).

Cut the head from the Airfix figure, drill out the neck to receive the spigot of the metal head, and carve in the battle-dress blouse lapels. At this stage the neck can be trimmed to depict a collar and tie, since this is to be an officer figure, or it can be left to represent a scarf.

Gaiters are now cut into the Renwall model's legs, and, then, having cut both figures at the waist, the upper portion of the Airfix piece is cemented to the Renwall legs (Fig 7). A suitable base is made from thick plastic sheet, or a combination of plastic and metal sheets as described in previous articles, and the new figure is attached securely with tube cement.

The metal head is now Araldited into the neck, and left to set hard for 24 hours.

Next make, from scrap plastic, map and field-dressing pockets, belt, pistol holster and pouch, binocular-case, and shoulder straps, and fix them to the figure as in Conversion I. Cut the left arm at the elbow, and having shaped the cut ends as in Fig 8, re-cement it and attach a map, made from thin paper, smeared

with plastic solution, to the hand. Make good all joints, check all stages, and undercoat ready for painting.

Conversion 3

Final figure of the group depicts a British Brigadier pointing to map. Items required: Airfix Motor Racing Driver, standing (or any plain standing figure); Historex arms from assorted arm packet; Rose Models head from C1a.

Remove the head and arms from the figure, drill the neck, and cut in battle-dress blouse lapels and pockets. Trim the waist and fit a belt made from .01 inch plastic strip. Then carve the trouser legs to make gaiters. Again use thin plastic sheet for the map and field-dressing pockets, and attach another pistol holster and pouch to the right hip. Araldite the

Colouring Details

Brigadier's Cap: Khaki, with scarlet band. Brown chin-strap. Gilt buttons and badge.

SAS Officer's Cap: Khaki. Brown chin-strap. Silver badge. Gilt buttons.

Beret: Khaki. Silver badge for Coldstream Guards.

Battle-dress Blouse: Khaki. C. Gds have shoulder titles, white lettering on red.

Trousers: Khaki.

Equipment and Gaiters: Khaki-green.

Gloves: Brown semi-gloss.

Boots: Black or brown semi-gloss. Guards officers wore black boots in battle-dress.

Binocular cases: Brown semi-gloss.

Gorget patches (Brigadier): Scarlet, with central crimson cord and gilt button.

Badges of rank: Brigadier: White with scarlet edging. SAS: White with light blue edging. Coldstream Guards: Bronze.

Map: Basically white, with odd patches of pale green, and brown.



The three figures seen individually showing (from left) the SAS officer, the Brigadier, and the Coldstream Guards officer. The paper map is in the foreground.

metal head into the neck socket, turning it slightly to one side, and bending it forward to give the necessary downward-looking effect. Select from the packet of Historex arms the right arm with pointing finger, and the left one with hand flattened, cutting and re-cementing this so that the palm is underneath. Cement the arms in place with tube cement, and fit shoulder straps, before attaching the whole figure to a suitable base. Smooth down all joints, and prepare for painting.

As an accessory to this figure, I have made another map from paper, and folded creases into it before coating it with plastic solution and allowing it to dry hard before painting. It fits very well on a vehicle bonnet or tailboard and with the figures grouped round, conveys a good effect. A ball pen and crayons can be used to simulate the printed surface of the map.

By varying the headgear, and fitting wireless headsets or other equipment you can ring the changes on these pieces, to give you tank crews, artillerymen, signalers, etc, and I hope they will also get you going on ideas of your own.

The set of arms that I mentioned above contains a dozen pairs, and costs only 5s from Historex Agents, 3 Castle Street, Dover, Kent, and the same people can also supply sets of jerricans and pioneer tools in 54 mm scale, which can give further authenticity and 'atmosphere' to your figures and vehicles. These new items will be reviewed in detail in a later issue.

1815—from page 241

Advance Guard rifleman (Brunswick) who has a modified slouch hat with a feather plume added, plus a rolled (Plasticine) blanket over the pack.

The Highlanders are easily 'converted' by painting in the colours of the three regiments at Waterloo, but the set provides the means of making a mounted officer or a general. The feather bonnet is cut away at the sides to form a wedge, then paper 'sides' 4 mm high and 8 mm long are glued in place. The shoulder sash is cut away down to the knot, which is left in place, and a waist sash is added from Plasticine.

All figures should be painted over with Unibond before final painting, to give a proper surface for a permanent finish.

Next month we will be looking at cavalry conversions.

GERMAN ARMY 75MM HOWITZER AND LIGHT FIELD CART

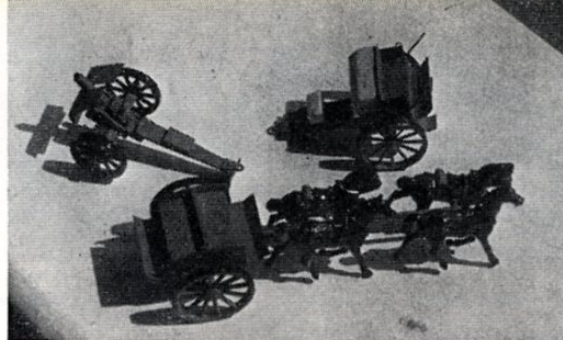
By W. J. Davies

IN accordance with the German philosophy of providing self-contained artillery support at all levels of organisation, infantry and panzer-grenadier regiments were provided with organic artillery companies. The companies in the line infantry division were supplied with six 75 mm infantry guns and two 150 mm guns. These were, in effect, small howitzers and fired HE only on a high trajectory.

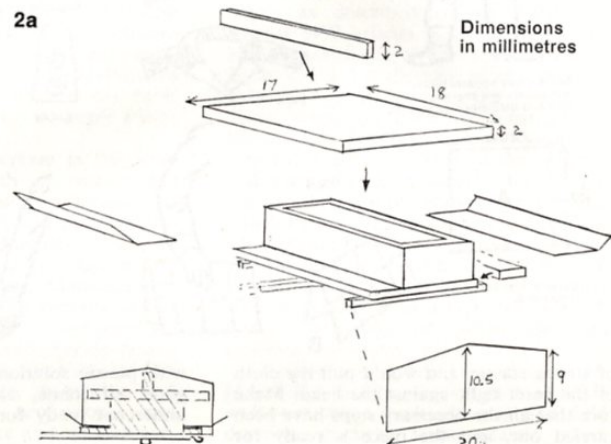
The model to be described, the 75 mm gun, is, to be honest, basically compromise, but acceptable, I think, in 1:76 scale. Its basis is the trail from an Airfix Civil War gun, cut off at the rear end of the elevating slit and with the rear part of the trunnion cheeks cut back as shown (Fig 1a). The front wheels from an Airfix Covered Wagon set replace the originals.

On to this assembly is glued part of the gun barrel, cut down as shown and slightly squared off to represent the jacket, with a small round stub protruding in front for the muzzle (Fig 1b). A semi-cylindrical block of balsa represents the raised breech—and conceals the inaccurate rear end! The trail is formed of balsa as shown (Fig 1c), the front of the underpart being trimmed to dovetail into the old elevating slit of the plastic gun-carriage. A recoil spade of card, and the original towing eye can then be added.

The limber for this gun is considerably simpler. As a basis, use the complete Airfix limber, minus the seat top. On this build up a structure composed of a 2 mm thick balsa slab to the dimensions shown, glued centrally on the limber body and flanked by thin card sides glued so that their front and bottom sides are flush with the limber (Fig 2a). This will mean that the rear projects well beyond the limber rear, and a small spacer of balsa is glued on top of the projecting limber beams to support the rear footrest. Footrests are simply bent card to the dimensions shown and the vehicle is completed by a thick bar acting as a seat divider, and by a wire hook glued to the centre pole of the



Above: Useful support for HO/OO size German 1939-45 infantry is given by this very simply made 75 mm infantry gun (ie. I. G. 18 L/11.8) and its horse-drawn limber. Shown rear right is a cable wagon, featured in a previous article on this subject in the September 1969 issue. Below: Conversion details for the limber.



limber. Horses should be arranged with two saddle-horses to the left, since the limber itself held only four men, the other two riding. The right horses are, of course, saddleless.

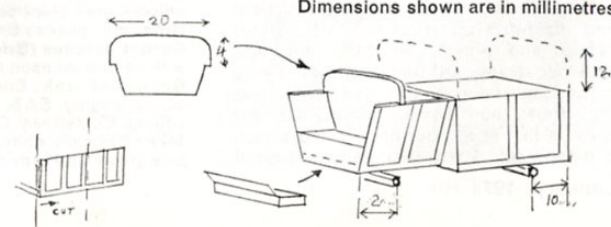
Light Field Cart (Leichter Feldwagen)

The remaining parts of both Airfix Civil War Artillery sets can now be economically used to build the standard light field cart. This was issued to all infantry formations from company upwards and was a two-horse canopied wagon produced in two versions; a steel-bodied pattern with pneumatic tyre wheels and a 'traditional' wooden-bodied type which was much more common. The latter is the subject of this article.

Use the complete wagon body, modified as shown, since the wagon had the front half of each side sloped inward towards the bottom, to allow the large front wheels to swivel. The best way is to cut away the sides by vertical cuts through the flooring and then taper the latter—any gap will be hidden by driver's seat and canopy. A wood bulkhead—which fills the triangular gaps and braces the structure—is fitted and a rather more elaborate one is installed as shown behind the original driver's seat tapered to fit. The necessary length of pole is fixed directly to the under-frame.

The wheels, which require new balsa axles fitted directly to the wagon bottom, are the original back wheels and a spare pair of gun wheels from the artillery set. The cart is completed by a tilt made of thin grey-blue material (or tissue painted this colour) stretched over wire hoops and glued. This gives the slightly sagging appearance of a canvas cover.

Dimensions shown are in millimetres



Books—from page 251

but both books are worth having if you are an enthusiast for their respective subjects. The German volume includes the He 219 and He 100, neither covered before as Profiles, plus an interesting section on Luftwaffe camouflage.

Pictorial History of the RAF, Volume 2, 1939-45.
Pictorial History of the RAF, Volume 3, 1946-70.
John W. R. Taylor and Philip J. R. Moyes.
Ian Allen Ltd, Terminal House, Shepperton, Surrey.
35s (Vol 2), 40s (Vol 3)

THESE books in the series giving a pictorial record of the development of the RAF, will be of interest to all air enthusiasts. They provide a potted history of the last 30 years, and provide a useful background to the momentous years of the RAF's history.

The photographs, many of which come from the Imperial War Museum or such valuable libraries as that of *The Aeroplane* are in themselves of value because many squadron and unit codes appear in aircraft photographs and there are a large number of combat pictures taken during some of the more spectacular actions in which the RAF took part throughout the world.

The books are well printed and the reproduction of photographs is first class. Each contains a lucid and fact-packed text as well as the dozens of pages of photographs.

RAILWAYS

Just a Few Lines.

Paul Jennings.

Guinness Superlatives Ltd, 24 Upper Brook Street, London W1.
65s.

THE author, well known for his sensitive and imaginative writings which long appeared in the *Observer*, has written and compiled a very moving book which cannot fail to tug at the heart strings of any rail-

way enthusiast worth his salt. In writing about four discarded branch lines: Colne Valley, Whitby-Scarborough, Oxford-Fairford, and Neath-Brecon, he manages to put into words the many abstract thoughts which many enthusiasts feel when coming within sight of an abandoned railway branch line. The scenes of vandalism and dereliction sicken the heart but one can't help feeling that the act of throwing stones through windows is just an inevitable result of a system which has allowed once noble and costly assets to tumble into decay and neglect with but seemingly scant regard to the communities in their midst and the years of history which have gone before.

North British Locomotives: A Catalogue of Narrow Gauge Locomotives (1912).

David & Charles, South Devon House, Newton Abbot, Devon.
50s.

THIS reprint of the North British catalogue of 1912 is of undeniable interest to students of railway locomotives. It covers locomotives ranging in gauge from 2ft to 3ft and each type is illustrated and accompanied by a comprehensive table of dimensions. The multiplicity of different designs only increases the thirst for more information which of necessity is missing. Additional notes by Alan Dunbar give the Works Numbers from which can be deduced the quantity built and the ownership of some of the designs, but one wonders how successful they all were and whatever became of them. If perhaps you feel over-familiar with the products of Swindon, Darlington, Crewe and the other main line railway companies, you will be refreshed by this glimpse of another aspect of British locomotive design and construction, practically all of which were built for service overseas.

MILITARY

German Combat Uniforms, 1939-1945.

S. R. Gordon Douglas.

17s 6d (paperback), 25s (hardback).

French Napoleonic Artillery.

Michael Head.

Soviet Combat Tanks, 1939-1945.

Peter Chamberlain and Chris Ellis.

20s (paperback), 28s (hardback), each
Almark Publishing Co Ltd, 104-106 Watling Avenue, Edgware, Middx.

THESE three new titles from Almarks all follow the style of previous releases with pictures, drawings, and colour plates in each in addition to the usual historical text.

German Combat Uniforms is, in fact, a second edition of a book first published in a larger page size last July. However, the new book has revisions and additions to the text, a number of extra illustrations, revised colour art, and an extra section featuring the main infantry weapons. While the earlier illustrations remain the shape of the book is changed to the current Almarks page size. The extra illustrations are of value since they show additional badges and other matter from US wartime intelligence books.

French Napoleonic Artillery is a most comprehensive book with many scale drawings of guns and wagons in addition to descriptions and illustrations of the uniforms of the many different artillery branches in the French Army in the 1804-1815 period. Napoleon's artillery was quite complex in its organisation and dress but this book unravels the subject very well. Historex models are used in some of the illustrations, but the eight colour plates show uniform items, plus saddles and saddlecloths. For anyone modelling this period, either Historex, Airfix 00/HO, or others, this should be a most useful reference book.

Soviet Combat Tanks is largely pictorial with some 130 pictures and scale drawings, plus some colour illustrations on four pages showing typical paint schemes for Russian tanks. This book deals only with tank types and shows virtually every model produced, generally with several pictures of each. Some Lease-Lend and captured types are also shown, and there is a data table and introductory text as well as lengthy captions.

'Hunt' Class Destroyers—from page 246

The very presence of a torpedo-armed destroyer—even as diminutive as a 'Hunt'—was often quite sufficient to deter heavy enemy warships. In the Battle of the Barents Sea, the German heavy cruiser *Hipper* quickly withdrew when the four lightly armed 'O' class destroyers escorting Russian Convoy JW51B turned aggressively towards her. With exemplary valour, Captain R. StV. Sherbrook, RN—the Captain (D) in command of HMS *Onslow*—engaged the mighty *Hipper* with his tiny 4 inch HA guns and the German ship, fearful of a torpedo attack, disengaged. For this action, Captain Sherbrook—who was badly wounded—was awarded the Victoria Cross.

Such then, was the potential of the destroyer so long as she had not expended her torpedoes, and this may be a clue to the reason for the appearance of the tubes in the Type III 'Hunts'.

Like the Type IIs, all ships had twin 4 inch mountings in 'A' and 'X' positions, and depth charge rails in association with four throwers on the quarter deck. Many had the radar 'lantern' amidships, and some a radar aerial on the foremast with a cable trunking parallel to the mast, supported by struts projecting forward from it.

There were two main variants in respect of close range armament. Some Type IIIs had conventional bridge wing sponsons carrying power-operated twin Oerlikons, with a third twin in the position vacated by the suppressed twin 4 inch on the quarter-

deck. Others had an extension built on to the projecting part of the lower bridge, where a single hand-worked 40 mm Bofors was mounted. A second Bofors was fitted in 'Y' position, and ships with this armament had no bridge sponsons. As before, two or three of the group had the 2 pdr pom-pom 'bow-chaser'—and all, of course, had the quad pom-pom mounting.

The torpedo tubes and their standard torpedo davit again made it necessary to reposition the boats, their davits being shifted back to the original site at the break of the fo'c'sle.

Type IV: Only two ships comprised this group—both built by Thornycroft to their own design. They were elegant craft of unique appearance, and had a most unusual hull form which included a long fo'c'sle deck extending right aft to 'X' gun.

Three twin 4 inch mountings were carried, the faithful quad pom-pom again appearing abaft the funnel. Often referred to as the 'Arcticised Hunts', the two ships—*Brissenden* and *Brecon*—had extensive steam heating provided around upper deck positions and their special triple torpedo tube mounting amidships was operated from the deck beneath, allowing the crew to remain unexposed.

Next month I will be dealing with the modelling of typical ships from the first three groups, adapting the Airfix *Hotspur* kit, together with the usual odds and ends from the spare parts box.

NEW KITS AND MODELS

Revell: 1:32 scale Corsair

LATEST from Revell in their fast expanding range of big 1:32 scale kits is the F4U-1 Corsair, which turns out to be a very fine model indeed with particularly good surface detail. The model captures the true brutal character of the real thing and the markings depict Lt Ira Kepford's aircraft of VF-17. All the parts are neatly moulded and there is a complete dummy engine and cockpit interior. Revell have included a simple wing folding feature with a sturdy yet inconspicuous hinge. On a 'dry run' this seems foolproof enough but whether or not wing sag creeps on with age remains to be seen after assembly. This is certainly one of the best yet of Revell's 1:32 scale offerings and is good value at 19s 6d. As supplied it also has a simple colour scheme—patrol blue all over—and accurate markings. *C.O.E.*

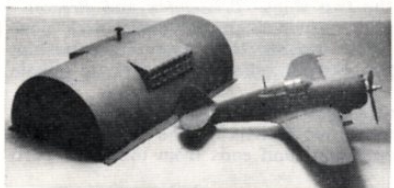
W & H: Sea Bee Showcase

WE often get requests for sources of inexpensive showcases. Now W & H Ltd, 14 New Cavendish Street, London W1, are distributing a neat example which costs 16s 7d plus 2s postage. The case comes in simple kit form, made entirely from polystyrene, with a black slotted plinth-like base, four sides, and a top. Ordinary plastic cement is used for assembly. Here care is needed for over-enthusiastic application of cement will, of course, show on the clear transparent sides. Considering the limitations of transparent polystyrene—which tends to go 'frosty'—the makers have done quite a good job. Even so, the sides are not as crystal clear as glass but they are adequate enough and would probably improve with a little polishing. Overall, this is a remarkably cheap way of obtaining a sturdy showcase. Its effective dimensions are 11 15/16 x 2 1/4 x 2 15/16 inches, not large enough for aircraft but very good for model cars, ships, small tanks, or soldiers. *C.O.E.*

Modakit: Nissen Hut, 1:72 scale

ONE of the new vacu-formed kit manufacturers which have recently started business is Modakit of 13 Larchfield Way, Horndean, Hants, PO8 9HE. They recently sent us their first kit which is a 1:72 scale Nissen Hut.

It is perhaps surprising that no one has tackled this particular subject before as it has so many applications in model layouts. As a vacu-formed product, the kit



has an infinite variety of configurations which can be made from the same basic selection of parts, showing that the manufacturer has thought carefully about the potential.

A long and detailed instruction sheet is included and when making the kit we followed this exactly to see that it covered all aspects of construction. There were in fact no complaints on this score and Modakit even include two elastic bands for holding the various parts together whilst they dry out. Also included is a piece of acetate sheet for window glazing and some plastic rod for the chimney.

The plastic provided in the kit is fairly thick but some support needs to be given, firstly under the base to ensure that this does not warp, and secondly, at the joint between the roof and the base. Providing these two points are observed, the model makes up into an extremely rigid building very easily. Cutting out the windows was a little difficult and rather time-consuming in comparison to the rest of the construction. But here again, the instruction sheet suggested the best way of doing the job and a neat finish resulted.

We have nothing but praise for the increasing number of people who are going into small-time kit production using vacu-formed methods. This latest example will be of considerable use to all wargamers, military modellers, model railway enthusiasts, and the many acromodellers who like to display their products against a realistic scale background. Price is 8s, post paid. *A.W.H.*

Italaerei: RE.2000 Falco

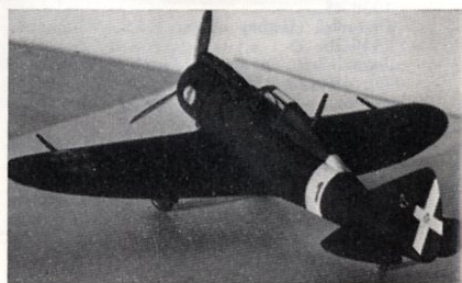
ITALAEREI, the new Italian manufacturer, are fast setting standards which are some of the best in the world. They have continued to produce kits of Italian second world war aircraft at about four-month intervals and the latest is the radial-engined fighter, the Reggiane RE.2000 Falco 1.

This diminutive fighter did not find great favour with the Italian Air Force but was exported in quantity to Sweden and Hungary. This fact is reflected in the excellent three-part transfer sheet which comes with the kit. Markings for an aircraft of 377a Squadriglia of the Italian Air Force are included, with those for a Swedish and Hungarian version.

Alternative canopies are given and the various parts made up well. A fully detailed instruction sheet has construction details in four languages.

The only slight difficulty comes in getting the wings and fuselage to join together. The bottom surface of the mainplanes is constructed in one piece and the two top halves fit so snugly that they have to be eased a little with a file and sandpaper to make sure that there is dihedral where the wings and fuselage join.

This excellent kit can be obtained for 11s 9d from Modeltoys of 246 Kingston



Road, Portsmouth, who are the main importers, and from Argyle Models, 105 High Street, Edinburgh, who supplied our sample. *A.W.H.*

Airmodel: Cockpit canopies

AIRMODEL, the German kit conversion company whose Karlsruhe-based operations have provided the modeller in the last year with a number of excellent bits and pieces to modify existing kits, have started a new line.

Realising that one of the largest problems facing the modeller is in moulding his own canopies for conversion jobs, they have now produced a range which, with one exception, contains canopies for a large number of popular models.

Four of these have already reached this country and are now on sale from the main UK Agents—Argyle Models, 247 Argyle Street, Glasgow C2.

Each packet, which retails for 3s, contains three cockpit canopies. They are all vacu-formed in clear PVC sheet and are to 1:72 scale. Those released so far include Set No 1 for USAF two-seat fighters, the F-100F Super Sabre, F-101B Voodoo and the F-105F Thunderchief. No 2 in the series has parts to convert the Airfix Hercules into an air/sea rescue HC-130H, a canopy for converting the Hasegawa T-33 into an F-80 Shooting Star and another canopy for the two-seat F-106B Delta Dart. Set No 3 includes canopies for two-seat versions of Russian aircraft like the MiG-15 Midget, MiG-23 Mongol and a single-seat version of the Il-2 Stormovik. The last in the new series has canopies again, but this time for NATO aircraft. It includes the Fiat G.91T, Mirage IIIB two-seat trainer and the two-seat Jaguar.

As the mouldings are made from PVC sheet, the modeller will not be able to use the normal polystyrene cement to fix the canopies in place. A contact adhesive has to be used but there are plenty of these on the market and this should present no problem.

So far, we have only had the opportunity to make up one kit using the new products. This, as can be seen from this month's conversion article, is the MiG-23 Mongol, where the beautifully clear

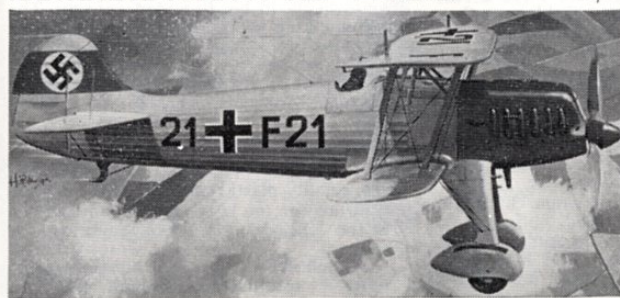
Continued on page 266

AIRFIX magazine

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New Kits—continued

canopy did justice to an already good kit. As with most of the other offerings there has to be a certain amount of additional work on the model like carving out a second cockpit space, adding a second seat and instrument panel, but the main difficulty of moulding the canopy has now been overcome.

Argyle Models' address for mail order is 105 High Street, The Royal Mile, Edinburgh. A.W.H.

Airfix (Germany): Transfer books

AIRFIX'S associate company Plasty, in Germany, have brought out an exceedingly good idea to accompany the kits marketed in that country.

These are two books of transfers, one devoted to the present-day Luftwaffe and another providing a really comprehensive range of the world's national markings for aircraft.

The markings are put together in book form and the leaves are easily detached. In the case of the Luftwaffe set, each colour for the national insignia and fuselage codes is printed separately and the modeller will have to superimpose the black shape on a white ground. Other pages, however, contain fuselage stencil, ejector seat markings, rescue arrows and a black, red and yellow tail insignia of German aircraft in register. Apart from this the final page contains a beautiful set of unit markings for all Geschwader at present using either the F-104, Fiat G.91 or T-33. These are exceptionally well printed and the book is worthy of purchase for these markings alone.

The second book contains pages of different shapes in the appropriate colours which can be cut out and put together to form any type of national marking one cares to mention. Ranging from the difficult Irish Air Corps shapes to the simple red and white markings of the Royal Danish Air Force, a great number of combinations can be achieved. This idea is very welcome and will overcome a few problems for the model-maker wishing to make off-beat Air Force aircraft.

At the moment, the two Plasty transfer books can only be obtained privately from correspondents in Germany, but Argyle Models are hoping to stock them and their advertisements should be watched to find prices. A.W.H.

Tamiya: 1:100 scale B-52F, IL-28, and F-4K

THE largest aircraft kit yet produced by Tamiya to 1:100 scale is the B-52F Stratofortress, a review sample of which has been received from Jones Bros of Chiswick. For 79s 9d the modeller gets a gigantic kit whose wings span 23 inches and is an inch longer than its 1:72 scale contemporary, the Frog B-47. We had not completed our model at the time of writing, but what we have made up so far indicates that it is going to be a dazzling showpiece.

Much thought and insight have obviously gone into its production, but we wonder why Tamiya should have elected to model the B-52F. Deliveries of this variant began in 1958 and it is due to be withdrawn from service soon. To convert the model into a 'G' or 'H' ver-

sion one would have to shorten the fin, modify the rear fuselage and make alterations to the engines.

These, however, are academic points in no way related to the magnificent quality of the kit. Moulded in silver plastic, it has 140 parts, most of which fit together with remarkable precision. The only areas needing great care are the tailplane/fuselage joints, which are rather slack, and the assembly of the undercarriage, a delicate and complex work of art. The bomb bay can be assembled in the open position, with the bombs extended on their racks, and we wish that all cockpit transparencies were as perfect a fit as those found here.

Transfers are provided for three B-52s, two in silver finish (one with black undersurfaces, the other with white) and one in the now familiar USAF scheme of green/tan/grey. The markings are very well printed with a matt finish. Tamiya provide an eight-page booklet giving a history of the B-52, assembly instructions, detailed painting notes and comprehensive drawings showing the application of the camouflage scheme.

This kit will be an obvious candidate for IPMS championships, offering a golden opportunity for the application of various shades of silver. The high price may deter some modellers but it is money well spent. Jones Bros hold stocks and can supply by post, postage extra.

Tamiya's 'mini-jet' range continues with 1:100 scale kits of the Ilyushin IL-28 and Phantom F4K/M. Both machines have been covered in 1:72 scale, but it is interesting to study how Tamiya apply their smaller scale to the Russian aircraft.

The IL-28 features a disconcerting angle of dihedral on the mainplanes, an error which may be overcome by cutting off the wing locating tabs and carefully cementing these parts directly to the fuselage. Otherwise it is a neat and accurate little kit, with subtle surface detailing. Five different transfer sets are offered: Russian, Chinese, Finnish, Indonesian and Polish.

Assembly of the Phantom is virtually identical to the Tamiya kit of the F-4E, reviewed last July. Markings are provided for an RAF machine and for the Royal Navy Phantom which took part in the London-New York air race in 1969. Again, painting is dealt with in detail, and the transfer sheet is marred only by the roundels, in which the red spot is slightly off-centre.

Both kits are ideal for beginners and can be obtained from Jones Bros of Chiswick, who supplied our review samples. Each cost 9s 9d, postage extra. B.R.

Lindbergh: 1:48 scale Curtiss Jenny and 'Winnie Mae'

RECENTLY received from the distributors, Riko, are two Lindbergh kits which are ideal subjects for conversions. Both kits are to 1:48 scale and are of the Curtiss Jenny and the Lockheed racing aircraft, the 'Winnie Mae'. The general standard of both kits is quite acceptable, neither of them suffering from excessive flash or gaping joints. Both models are accurate and, just as important, they capture the character of the actual aircraft very well. The Jenny is particularly well done as it appears just as delicate and

elegant as the real thing. Surface detailing is good in parts, with the reinforcing tapes on the tailplane ribs, but unfortunately this is not done on the mainplanes, which consequently appear as if they were not fabric covered on the actual aircraft. An incidental feature of the Jenny kit is the inclusion of a tail-skid trolley of the sort used to ease ground handling of aircraft of that period. The only difficulty in the construction of the kit is that the wingtip skids are moulded around the outside of the wheels and are likely to be accidentally discarded before it is realised what they are. Another minor complaint is that the transfers were printed out of register, but this aircraft is such an ideal subject for conversion work that the transfers are quite likely to be discarded anyway. The 'Winnie Mae' is also ideally suited to a host of conversions, but even if built without any alterations, it still makes a very attractive model of this famous record-breaking aircraft. Prices: 14s 11d each. P.W.

Tamiya: 1:12 scale Lola T-70

TAMIYA is well-known as producers of quality plastic car kits. This Japanese firm favours the larger scales and it is one of the 1:12 scale kits we have received for review.

At one inch to one foot one is building quite a sizeable model, and thus the various items are that much easier to handle. Incidentally there are nearly 400



parts in this kit including practically every visible piece down to the smallest detail.

Complete independent working suspension with coil springs and dampers, working rack and pinion steering and lights are all reproduced as in the prototype. The model is motorised in Tamiya's usual style of enclosing the electric motor and gearbox within a perfect replica of the original's power unit.

The amount of detail in this kit is quite fantastic, working locks and stays on the doors, a fully fitted dashboard and interior fittings, etc., in fact one could truthfully say 'the lot'; there is even a lifting jack included! A good feature in the design of this kit is the wheels which are integral with their stub axles thus ensuring true running. The model is almost built as per the prototype it is so complete.

All parts are pre-coloured according to their location, with a steel rather than chrome finish where appropriate. The only suggestion that could be made here is that the body shell be painted, as plastic has a tendency to fade.

This is not a kit to be rushed but the time taken is adequately rewarded with a practically perfect replica of the original T-70. The instruction manual is the most lucid and concise set of instructions we have

Continued on page 268

AIRFIX magazine



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New Kits—continued

seen. A stage by stage assembly that could be worked on a day by day basis. In fact that is the method one ought to adopt on such intricate models as this.

Although costlier than some car kits, the Tamiya Lola T-70 Mk III at 139s 11d is excellent value. One hesitates to think what the cost would be if the model was scratch-built by a professional to the standard of this kit. All big model shops should be stocking this kit by now, certainly all those advertising in this magazine. *B.L.*

Airframe: 1:72 scale aircraft

READERS will probably have noticed in the small ads section of *Airfix Magazine*, in recent weeks, a new range of vacuum-formed kits from Canada selling under the name of 'Airframe Kits'. These are all to 1:72 scale and cover unusual and interesting aircraft types.

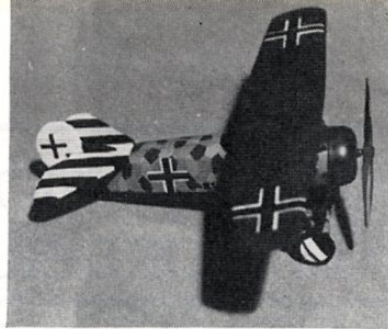
As with the similar Rareplane kits the modeller is provided with scale plans, instructions and pre-formed vacuum airframe parts. Wheels, struts, engines, propellers, transfers and other small items are not included but as the kits are intended for advanced modellers only, these items should be easy to obtain elsewhere. Where appropriate, clear acetate canopies are provided, together with wheel doors and spinners. The framed canopies are very neat mouldings but require impact adhesive to fix in place. We think most modellers will cut their own wheel doors from the flat plastic surrounding the mouldings rather than use the rather thin items included.

It is a pity that the standard of drawing on the plan is rather poor as it is most important to work to an accurate plan if the parts are to match each other during construction. The standard of packaging reflects an attempt to keep down production costs, and is not up to Rareplane standards.

One of the best features of this range is the provision of inner spars and 'profile' bulkheads to add strength to the model. The construction of the airframe is thus much simpler yet sturdier than on other vacuum-formed kits.

The standard of moulding is very good, especially on the wings, but the Martin Baker MB5 has inaccurate nose and rear radiator shapes. To correct these faults on such kits necessitates filling the body with plastic putty and then, when all is dry, and after the fuselage is joined, careful filing until the desired shape is arrived at. There is not much room for making mistakes!

We would strongly recommend the little Bachem Natter rocket-plane as an ideal 'starter' for those not used to vacuum-formed modelling. It is both simple to assemble and accurate in outline. Although these kits are expensive they cover subjects



Above: Fokker DVIII. Below: Bristol M.I.C. Both are made from Airframe kits.

unavailable in conventional kit form. The results of careful work can be very pleasing as the photographs show.

Our review samples came direct from John Tarvin, 5166 Portland Street, Burnaby 1, British Columbia, Canada. International money orders should be sent to that address. The Fokker DVIII, Bristol M.I.C., Bachem Natter, Siemens Schuckert DIII, and Morane Saulnier 'L' Parasol all cost \$1.50 each and the Fokker DXXXIII, DFS 230A Glider-transport, and Martin Baker MB5 are \$2 each. Postage of 25 cents should be added. *R.E.G.*

Aurora: 1:144 scale DC-10

AURORA seem to be making a habit of getting airliner kits of new prototypes on the market at the same time as the real thing is wheeled out for its first flight. They did it with the Boeing 747 and now have repeated the achievement with another 'jumbo'—the McDonnell-Douglas DC-10.

Unfortunately kits of aircraft so new on the production lines tend to lack detail and this combined with Aurora's style of moulding results in a model which is rather bare.

In 1:144 scale the DC-10 does, however, provide a very good basis for custom paint jobs. The kit comes with transfers for American Airlines but there are many more that can be applied which will, no doubt, offer a considerable challenge to the modeller specialising in civil aircraft. Luckily the scale is that of the popular Airfix Skyking series and the DC-10 will fit in nicely with other models from the range.

There are 38 heavily constructed parts which are very easy to assemble. Fuselage windows are left unglazed and it is obvious that a lot of added weight is needed in the nose if the model is to stand on its undercarriage. The parts fit together neatly with an adequate instruction sheet giving a lot of detail about the real aircraft. The kit comes in a 'jumbo' size box and costs 19s. Our review sample came from Jones Bros of Chiswick who can supply by post, postage extra. *A.W.H.*

Riko: aircraft transfers

INCLUDED in the latest Riko 1:72 transfers are the special features of the range—a full colour profile and an illustrated sheet giving details of the unit insignia included on the transfer sheet. Although the artwork on the insert is nicely painted it is obviously taken from other well-known sources as the subjects covered (usually side views of 8 small fighters or 4 bombers) duplicate many colour scheme mistakes found in other publications! Only side views are shown and it is assumed that modellers will be able to guess the appro-

priate colours on the artwork as no colour code is given.

The transfers themselves are very neatly printed, though some of the small 'extra' squadron badges appear much too big for 1:72 scale. The registration and adhesion are excellent but unfortunately not enough care has gone into the research of these sheets. For example, sheet N4 for the Hurricane and Kittyhawk includes fin flashes with incorrect blue colours, various serials which are the wrong size and style, and code letters in white, dark grey and bright blue! Squadron markings duplicate some already included in the Frog kits or available already in the Almarks and ABT range.

This sheet does, however, include some very neat Polish markings. The best sheets in the range are N3 (Me 109 and FW 190), N5 (Italian Fighters), N12 (B-24), N10 (SM79), N14 (Russian Fighters), N11 (BF 110 and Ju 87). The last-mentioned sheet is probably the best of the bunch, but all the sheets listed are particularly well worth having either on the grounds of quality, originality, or both.

These transfers are attractively packaged and generally well printed but as no national markings are included on most sheets and colour scheme details are limited to rather vague side views, the recommended purchase price of 9s 11d seems a little high. *P.W.*

Tamiya: 1:35 scale 6 pdr, M-42 and M-41

NEW releases from Tamiya, imported to Britain by Riko, will both be more than acceptable to military fans. First of these is a fine replica of the famous 6 pdr anti-tank gun, a very pleasing departure from Tamiya's more usual concentration on American and German models. As supplied by Tamiya, the 6 pdr closely follows the mode of assembly used in the existing Airfix 1:76 scale model of the same weapon. In fact the parts all look like the Airfix kit parts magnified! Construction is thus exceedingly simple and all that is now needed is a 1:35 scale Jeep or Carrier to tow it. A second sprue has three British figures split into separate arms, bodies, and legs, so that a degree of variation in position can be achieved with the completed crewmen. Good value this at 13s.

Second new kit is a US Army M-41 Walker Bulldog, successor to the better known Chaffee of World War 2 days. The Walker Bulldog is similar in appearance to the Chaffee but with many improvements. The detail on this model is exceptionally crisp with beautifully realistic tracks and suspension details, though the suspension is non-working. The instruction sheet is a work of art in itself and thoroughly exemplary, illustrated with pictures of the real thing and with painting and detailing tips. The kit is motorised with ready-assembled gear trains and axles. We had the remote control version with an engine for each track, but a simpler free running version is available. A companion kit is the M-42 AA Gun Motor Carriage, the flak version of the Walker Bulldog with a twin 40 mm Bofors mount in an open turret. Chassis and suspension components are the same as for the M-41, but a new hull top and, of course, turret and mount are supplied. Our sample was a free-running motorised version but a remote control version is

Continued on page 272

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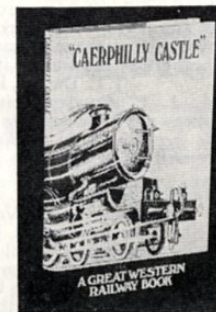
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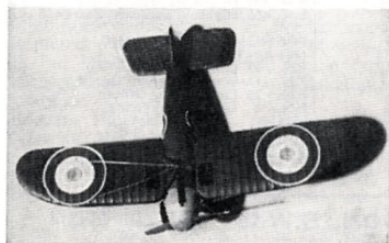
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Letters to the Editor

Flying blackboards

MR. BOWYER'S article on the Blenheim's early days in RAF service calls to mind a photograph in 90 Squadron's scrapbook, which was exhibited at RAF Honington's Battle of Britain open day in 1957. This showed K7056 after a belly-landing. The machine's hydraulics and w/t had failed in flight, and instructions for the pilot were hastily painted on the sides of two other Blenheims (presumably in succession, as one of them went u/s in its turn before take-off). I believe K7056 was claimed to be the first Blenheim to make a wheels-up landing.

Incidentally, another photograph in the Squadron's scrapbook showed its Canberras with a Golden Hind (the motif from their badge) painted on their fins for a flight to Gibraltar on exercise in 1955. This Canberra unit marking is a little-known one: perhaps a reader can provide a photograph illustrating it?

T.T. Theulis, Hempsted, Glos.
M. J. F. Bowyer writes: K7056 was delivered to 90 Squadron in June, 1937, and made her wheels-up landing on 26.11.37. She ended life as 1027M.

Vostok colours

AS THE issue of the Vostok kit seems likely to produce a battle over the colour scheme which will last as long as that concerning the Saturn V, I would like to get my shots in early. Using Hamlyn's *Encyclopaedia of Space*, the Life publication *To the Moon and Back*, and certain copies of *Flight International*, I have compiled colour schemes for the Vostok and Soyuz craft, based on the few photos and mock-ups shown in the West.

Vostok
Spherical re-entry capsule: Silver with green restraining bands.

Conical equipment module: Grey-green front section, with green gas bottles and silver detail, silver rear section.

Rocket final stage: White with silver band and aft plate.

Nose fairing: White, lettered 'СССР БОЦТОК.'

1st stage and boosters—White (silver around nozzles).

All engine nozzles—silver with bronze inside.

NB There is also a picture of a Vostok with silver nose fairing and final stage.

Soyuz
Spherical and quasi-conical crew section: Probably silver.

Equipment module: White (black detail to solar panels).

Launch escape tower: Silver.

Nose fairing: White with 4 black square fairings.

Rest of rocket: Silver (up to point at which equipment module is attached to final stage).

There is no visible lettering on either launch vehicle.

I must emphasise that these schemes may not be completely accurate, but they are as correct as is possible from my sources.

Howard G. Mason, Ascot, Berks.

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters column. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

Aerobatic teams

THE correction by A. G. Boak about aerobatics teams is still adding to the confusion which he mentions. At the 1964 Farnborough air display, it was 92 Sqn with Lightnings. I know because I was a member of the Squadron detachment. As for 111 Sqn they have not put in an appearance with Lightnings at Farnborough, 74 Sqn being the only other Lightning formation team to make it. When equipped with Hunters, 92 Sqn became the Blue Diamonds with a blue and white flash scheme, painted before they left Middleton-St.-George in 1961 and arrived at Leconfield to join 19 Sqn with Hunters and replace 72 Sqn, Javelins, which had disbanded. Middleton-St.-George was required for the Lightning OCU numbered 226. But I must agree the Black Arrows are nowhere near to being the immediate predecessors to the Red Arrows. To illustrate here is a check list of the important teams in between in order:

111 Sqn	Black Arrows	Hunter
92 Sqn	Blue Diamonds	Hunter
74 Sqn	Tigers	Lightning
56 Sqn	Firebirds	Lightning
CFS	Red Pelicans	Jet Provost
FTC	Yellow Jacks	Gnat
CFS	Red Arrows	Gnat

R. Sergeant, Irlam.

Details wanted

OUR company is publishing the *Traction Engine and Organ Enthusiasts' Handbook and Model Engineering Directory* for the fourth year in 1971. In addition to the usual sections listing Traction Engine, Organ and other Clubs, Displays, Museums, Rallies and other events, Model Engineering Clubs and publications we will also for the first year include a comprehensive list of preserved standard, light and narrow gauge railways.

We would therefore be pleased to hear from any organisation which feels that they should be listed in any of these sections. We would require full details of the Organisation and the secretary's name and address. Any special outings or events organised can be listed in our Events Diary.

There is no charge at all for inclusion in this Handbook and we hope that many organisations will contact us. We intend to print the Handbook for the first time this year, as opposed to previous duplicated editions and hope to exceed the 1970 circulation. Last year over 5,000 copies of the booklet were sold to the general public

and enthusiasts alike and we believe the handbook generally helped to publicise organisations and events.

C. L. Deith, Traction Engine Enterprises,
4 Station Road, Chingford London, E4
Anyone interested, please contact Mr. Deith direct—EDITOR.

Spiteful

I WAS interested in the photograph on page 117 of the November *Airfix Magazine*, as some time ago I too investigated the feasibility of modelling a Spiteful or Seafang variant. However no Spiteful or Seafang ever had a Spitfire 22 fuselage, the Spiteful fuselage being deeper and of quite different profile.

The only representative variant which can at present be easily reproduced, using standard kit parts as a basis, is the first prototype Spiteful NN660.

This aircraft was unique in combining a Griffon 61 engine with a Spitfire VIII fuselage and Spiteful wings. It is thus possible to build a model of this aircraft, using the fuselage and tail of a Frog Spitfire XIV and Attacker wings and undercarriage.

NN660 was sprayed aluminium overall, with standard C and C1 type roundels and prototype markings of the period. It first flew on June 30, 1944, but few photographs of it exist, as it crashed later that year.

M. D. Harries, Dorking, Surrey.
Nonetheless, in 1:72 scale using the Spitfire 22 fuselage certainly makes for a convincing Spiteful model even if it is not absolutely dimensionally correct—EDITOR.

Dayglo paint

HERE is a useful tip for those unable to get real red dayglo paint as needed on some aircraft.

I worked this out for my husband and two model-making sons.

I bought some red fluorescent poster colour from an art shop (about 2s 6d), then I painted a piece of scrap plastic in matt white; when dry I used the fluorescent red and when that was dry I painted it with clear varnish, it worked very well.

(Mrs.) E. M. Hannoford, Wadebridge, Cornwall.

Gloss finish

IT SEEMS that many, even advanced modellers have difficulty in producing a representative gloss finish on their aircraft models. I have never had any trouble producing just the right finish for any particular paint scheme.

My method could not be simpler and in fact emulates the RAF practice of the 'fifties of using wax polish.

Firstly, I paint the completed model in matt paint and then coat the whole model by brush, with liquid floor polish after applying transfers and other details. To represent a semi-gloss finish only one coat is necessary, but for a higher gloss a further coat is usually needed. The polish should just be left to dry as it is not necessary to rub the model down which means that small details such as aerials and masts are not in jeopardy.

As the whole model is coated a very smooth finish is achieved with no loss of

surface detail. Also transfers are there to stay and those horrible edges around lettering disappear. The polish also tones down the colours giving a more authentic appearance.

As to toning down matt camouflage paint the method I use is to treat the colours with slightly dirty thinners. It sounds like sacrilege but it gives that used appearance while retaining the correct basic colour scheme.

David Ebbage, Wembley, Middx.

Heinkel He 111H-22

IN THE November, 1970, issue, Mr Hall wrote that he was unable to find a picture of the He 111H-22 except in William Green's *Bombers and Recce Aircraft, Volume 9*. In *Die deutsche Luftwaffe 1939-1945* by Adolf Galland there is a picture of a He 111H-22 of II/KG53 at Venlo. The same picture is better reproduced in *Spione, Agenten, Soldaten* by Janusz Pielalriewicz. Both books are available in England, too, from Hersants.

On the He 111H-22 in this picture the V-1 is slung between the middle of the centreline of the aircraft and the right engine. A single MG81 is fitted in the starboard side window and the wire to start the engine of the V-1 ends below and behind the window in the fuselage.

The colour of the V-1 is Hellblau RLM65 on the undersides and fuselage sides, the sides of the ram jet engine and the fin and rudder. The uppersides of the fuselage to a little above the wings, the uppersides of the ram jet engine down to the middle and the uppersides of the wings are Schwarzgrün RLM70. This colour merges with a curved line into the RLM65.

The colours of the He 111H-22 are black on the undersides (all II/KG 53 aircraft at Venlo had black undersides, I/KG 53 aircraft at Oldenburg had light blue undersides) and splinter camouflage Dunkelgrün RLM71/Schwarzgrün RLM70 at the uppersides. The fuselage sides are mottled with light grey RLM76 or grey RLM 02. The fuselage crosses are black/white without black edge, like the crosses in Lindbergh's Dornier Do 335. The aircraft letter is a C in light green or yellow and behind this is a black A. The Geschwader code is not visible, but I believe this is A1, the code of KG53.

Paul Bezouska, Gerusheim, West Germany.

WHEN reading Alan Hall's article and conversion to the He 111H-20 I thought I could add something of interest. As a matter of fact the KG53 aircraft were coded A1 followed by the staffel code in yellow and the individual code in black. In



Recent views of Canadian Armed Forces Chipmunks sent in by Cpl Ewing, whose letter appears below. They are bright trainer yellow with dayglo red panels and black trim and codes.

that case the insignia Geschwader can be taken off from a Monogram's or from a Lindbergh's Dornier Do 17Z. But the aircraft could belong to the III/KG3 and it should be coded CK followed by the staffel and individual code all in white.

J. F. Castro, Porto, Portugal.

Canadian Chipmunks

AS IS evident by the photograph (above), the Canadian version of the Chipmunk differs somewhat to the RAF version. The Airfix kit offers the Canadian machine as an alternative but here is a full list of items for a true conversion to the Canadian version:

(1) Tubular u/c legs rather than the RAF fairing type. (2) Additional air scoops on bottom left side of cowl and beside rear cockpit, half-way up right side of fuselage. (3) Exhaust stack through bottom of cowl, just to right side of centreline... rather than the exposed manifold. (4) VHF radio antenna centred on top fuselage spine, located at the first row of rivets ahead of vertical fin. (5) Small first-aid kit mounted immediately aft of the rear seat on top of fuselage. (6) Landing light underside of left wing. (7) Hot-air exchange tube protruding through front cowl on bottom right side. (8) The canopy isn't quite right, but the job of putting on the side 'bubbles' is just too much for the average modeller. These 'bubbles' can just be seen in the close-up picture. (9) Disc brakes mounted on forward side of u/c

leg. (10) Tubular support behind windscreen, between canopy arch and fuselage. (11) Two short slides for blind-flying hood mounted on inside of canopy over front seat. (12) Numerous drainpipes under the engine cowlings.

The decals (transfers), are incorrect as included in the kit. They are correct from 1965 (April), but have been changed since. The biggest change is the omission of the RCAF from the fuselage, and the reduction of the underwing lettering to 'CAF' on the port wing. The tailflash has also been reduced in size and, effective September 1, 1970, all Chipmunks changed to serials in the 12000 series rather than 18000. Then, too, the fuselage sides now sport 'Forces Armées Canadiennes' on the right and 'Canadian Armed Forces' on the left. I don't know what can be done to get the decals changed to the markings now in use, but I would like to see them become available. Richard Gardners' article, July, 1970 issue, showed some details mentioned above, but not all.

Cpl W. L. Ewing, CAF, Manitoba, Canada.

Easibinders

Would readers please note that owing to ever increasing production costs it has been necessary to increase the price of the AIRFIX MAGAZINE Easibinder to 25s (£1.25) including postage and packing. It is available from PSL Publications Ltd.

News from Airfix—from page 235

1:24 scale Spitfire was modelled almost literally from life, the example in the Imperial War Museum being the starting point for the Airfix kit design team. Almost everything on the actual aircraft can be found in the kit, including a vast number of internal fittings which can't be seen once the model is completed. For instance, all the ribs and stringers on the inside of the fuselage are moulded, as are the various gas bottles and the radio set. The neatly moulded Merlin engine includes the tiny Rolls-Royce lettering and has mounting points just like the real aircraft. All the nose panels, of course, come away to give engine access. For 7s 6d Airfix are selling separately a tiny electric motor which can be built into the engine (completely concealed) to power the airscrew. Batteries and wires in the display stand provide the power for this optional item. The undercarriage retracts, of course, and locks positively into either the 'up' or 'down' position as required. PVC tyres give a most realistic simulation of the

actual rubber tyres. Dummy undercarriage indicators are included in the wing detail. The wings have working ailerons, plus access panels for the total of eight Browning .303 machine guns, all of which are fully modelled complete with ammunition trays. So a realistic 're-arming and maintenance scene' could be effectively arranged with suitable dummy figures. The ribs in the wings are also properly detailed.

There is a sliding canopy and cockpit access flap (though it was not physically possible to hinge this in the model), and a fully detailed cockpit with separate RAF pilot is featured. The gyro gunsight is astonishingly realistic, including a transparent screen, and transparencies are also given for lights and beacons.

Despite its huge size and intricacy (about 150 pieces), the kit is not beyond the skill of the average modeller. There is a most comprehensive 16 stage instruction book showing assembly in easy stages.

Panzerkampfwagen III Ausf M — from page 259

dry. Finally, add the little triangular pieces to the bottom front corners. When the turret is dry and trimmed up, cut an 11.5 mm diameter disc from 15 thou plastic card for the base to the cupola and cement in place in the correct position. For the cupola itself I used the boss from part 51, the side panel, of a Panther with strips of Microstrip cemented round and the vision ports cut out and moved up to the open position. The cupola could more easily be made from laminations but I wanted mine hollow to take the torso of the commander. Top with a neat ring cut from a suitable size ball pen case or from the top of the Assault Gun cupola, and add the split hatch from 10 thou plastic card in either the open or closed positions. The rear stowage box is made from scrap, etc, as shown in the diagram.

The mantlet was cut from 17 mm of a number seven plastic knitting needle cut in half down the middle with the spaced armour from 15 thou plastic card and Microstrip added, followed by the rest as shown. Add the final bits and pieces, smoke generators, doors with vision ports, hinges, etc, and finally finish off with a coat of paint to your particular scheme. In my case, Humbrol Afrika Korps Desert sand, very dirty from smoke and oil, etc, tyres and exhaust picked out in Dark Panzer Grey, all dusted over with Eighth Army Sand. The crew are from various bits of Airfix Afrika Korps Set cut and we'ded together with a compass point heated in a candle flame, flesh painted brown/sand colour to represent a good sun-tan, dirty linen clothing. Altogether a more casual type 'uniform' seems to have been fashionable



The PzKpfw III Ausf G was an earlier model used in the desert. Stowage of equipment and addition of spaced armour was, however, similar to the Ausf M described here.

in North Africa on both the Axis and Allied sides, tropical pith helmets or even captured caps, coats, etc, being worn by the badly supplied Afrika Korps.

If you decide to make the Ausf N version, the skirt armour, being very thin, was usually pretty well battered about and often had pieces missing. Try to capture this feature on your model—reference to photographs will show how it looked.

New Kits — from page 268

available. As with the M-41, the M-42 is a superb model. The remote control versions of each kit are 39s 9d, while the free-running version of the M-41 is 25s 11d and of the M-42 is 32s. Our samples came from Jones Bros of Chiswick but are generally available from large model shops. C.O.E.

Lasset: 54 mm model soldiers

WE have just received the initial figures in a new 54 mm range of the German forces of World War 2. They represent an officer and man of the Waffen-SS in service dress, with steel helmets, and can be obtained individually animated and variously armed, with rifle, machine-pistol, LMG, etc. All the detail is crisply engraved and authentic, whilst the animations are well-balanced and convincing. We feel that the steel-helmets are a little too deep from brim to crown, but this is a matter that can soon be put right with a few minutes' work with a fine file. The range is planned to include representatives from all three German Services, Army, Navy, and Luftwaffe, in addition to the SS. At 18s each, unpainted, these figures are good value, and will, we are sure, be well received by enthusiasts. They can be obtained at the above price, plus postage, from Greenwood and Ball, 'Martinhoe', East End Way, Pinner, Middx, who supplied our review samples. R.S.D.

Olive: 54 mm model soldiers

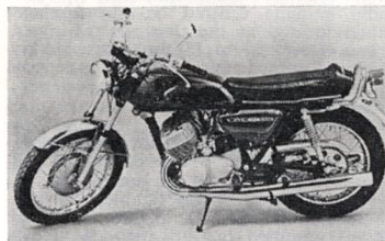
A FURTHER three additions to this excellent series of 'Colonial' period figures are now to hand. Two represent typical Boers of the 1898-1902 conflict, full bearded, and armed with 'captured' British long Lee-Enfield rifles. Details of the wide-brimmed hats, farmer's dress, and particularly the cartridge belts, have been extremely well done, and convey a convincing period impression. The third figure is of a British Infantryman serving in Zululand in 1879. All the items of his uniform and equipment have been faithfully reproduced, and he is armed authentically with a Martini-Henry rifle and

bayonet. We were specially impressed with the rendering of the early form of sun-helmet, usually very difficult to portray accurately.

Our samples came from Greenwood and Ball, 'Martinhoe', East End Way, Pinner, Middx, who will supply these unpainted figures at 16s each, plus postage. R.S.D.

Sanderson: 54 mm model soldiers

THE attention of collectors who want something 'different' in their collections is directed towards two amusing little figures originated by Cliff Sanderson. These represent girls, more or less in the 'altogether', but with the odd item of



For motorcycle fans Revell have released these two highly detailed 1:8 scale models in kit form, complete with plated parts, cables and fuel lines. At top is the Japanese Kawasaki Mach III 500 cc, price 55s. Below is a Harley-Davidson Electra Glide 1200 cc, price 70s.

dress and equipment to lend them a military air. One, wearing a German pickelhaube and officer's riding-boots of the 1880-1914 period, is flourishing aloft a 'stein' of beer, and the other, with a British Lancer's Full Dress cap tilted saucily over one eye, is leaning on a sword. We understand that these models are the beginnings of a range of figures that is intended to cover a wide variety of nations. The sculpture and engraving are very well done, particularly the faces, which really look feminine. Whilst not of universal appeal, perhaps, the figures are certainly unusual, and would form an interesting 'talking point' in a collection. For dioramas they are obviously intended to lend verisimilitude to scenes of rape, pillage, or lechery! Review samples were sent in by Greenwood and Ball, 'Martinhoe', East End Way, Pinner, Middx, from whom supplies can be obtained at 15s each (unpainted), plus postage. R.S.D.

Hinchcliffe: 1:76 scale cannons

THE finely detailed and accurately cast models of artillery pieces and other vehicles produced by this manufacturer in 54 mm scale will already be well-known to enthusiasts. Now, to cater principally for the wargamer, Hinchcliffe have issued in kit form artillery pieces to 4 mm scale as the starters in a new range. All embody the wealth of accurate detail that we have come to expect from this producer, and the component parts fit cleanly together to make really exquisite little replicas, which will, we are sure, soon grace many a miniature battlefield. Available at present are three British guns of the Napoleonic/Crimea period, a 6 pounder at 6s, a 9 pounder at 6s, and a 10 inch Howitzer at 8s, together with French guns of the same period, an 8 pounder at 6s, a 12 pounder at 6s, and a 10 inch Mortar at 5s. Additions to the range are planned, and will be eagerly anticipated by wargamers everywhere. Our review samples were submitted by Hinchcliffe Models, 17 Station Street, Meltham, Huddersfield, Yorks, who can supply at the above prices, plus postage. R.S.D.

AIRFIX magazine

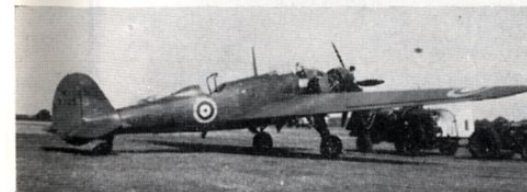
photoPAGE

More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal

Key: (1) An Avro 626, serial J321, of the Royal Egyptian Air Force pictured in April 1944. Note the carrier under the fuselage. Aircraft appears to be doped silver overall. (Kenneth Meehan)

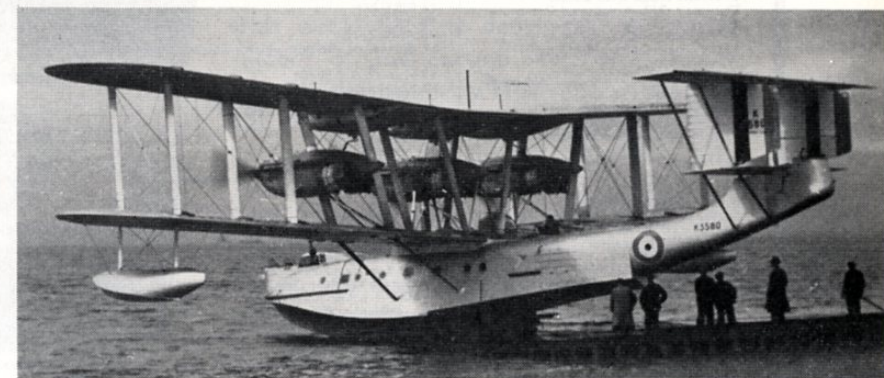


Key: (2) A veteran radial engine Hawker Audax, also of the Royal Egyptian Air Force, serialised K509, pictured in April 1944. Of interest is the absence of roundels on the wings, the crudely applied fuselage roundels and camouflage (standard dark earth and mid-stone) and what appears to be a bare metal front panel (at least as far as it is visible). There is a trace of silver dope around the serial (Kenneth Meehan). (3) Wellesley K7725 of No 76 Sqn at Finningley in 1938. Note the white outline to the squadron number which is probably red. The cockpit flap is open and cowling panels removed (C. E. Waltham). (4) Blackburn Perth K3580 pictured on the first public display day (either October 10 or 11, 1933) at the Blackburn works at Brough, near Hull. Aircraft was the first of three (K3580-2) and crashed off Stornoway in 1935. Note the stripes on the insides of the rudders (B. R. Goldthorpe).



3

Key: (5) A BE 2c of No 14 Sqn RFC in the Middle East and operating at Kantara or Aquaba against the Turks in 1916 or 1917. Fuselage appears to be in natural fabric while the wings are dark green. Picture by the contributor's grandfather who was a squadron member (James Mercer). (6) A colourfully marked B-45 at Melsbroek (Brussels) in 1954. Note the black A/D panels on the engine nacelles. Can anyone identify the unit? (Freddy Boeykens).



5



6

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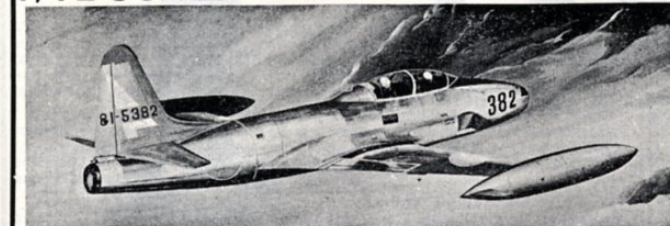
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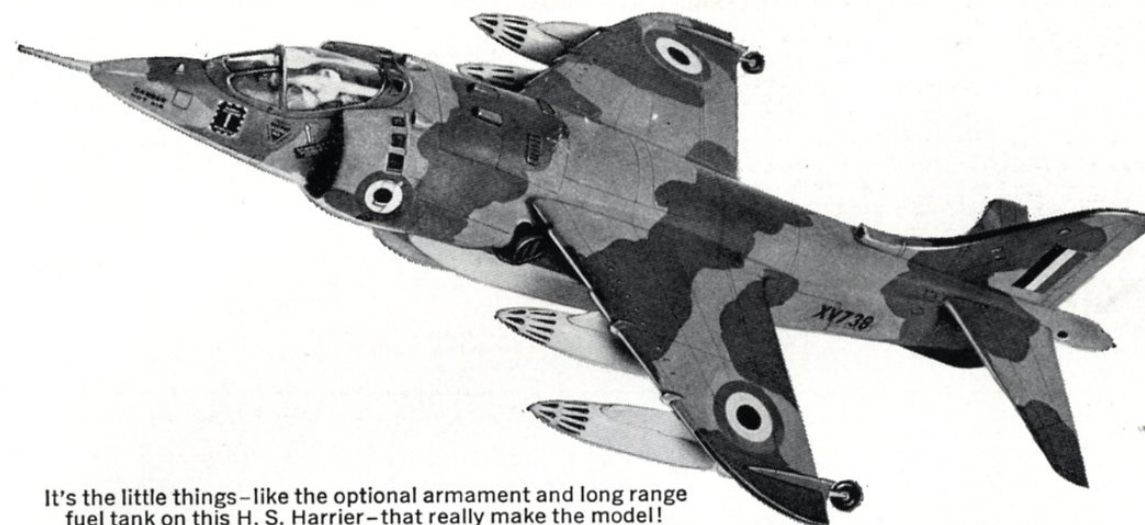
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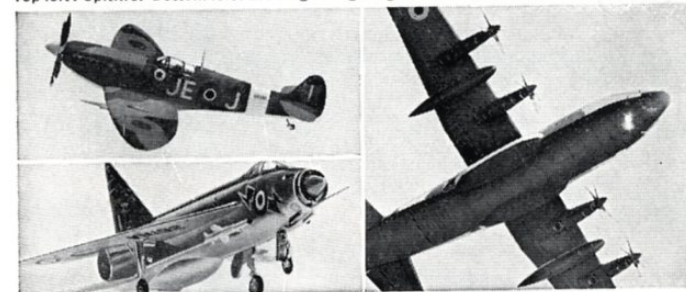
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